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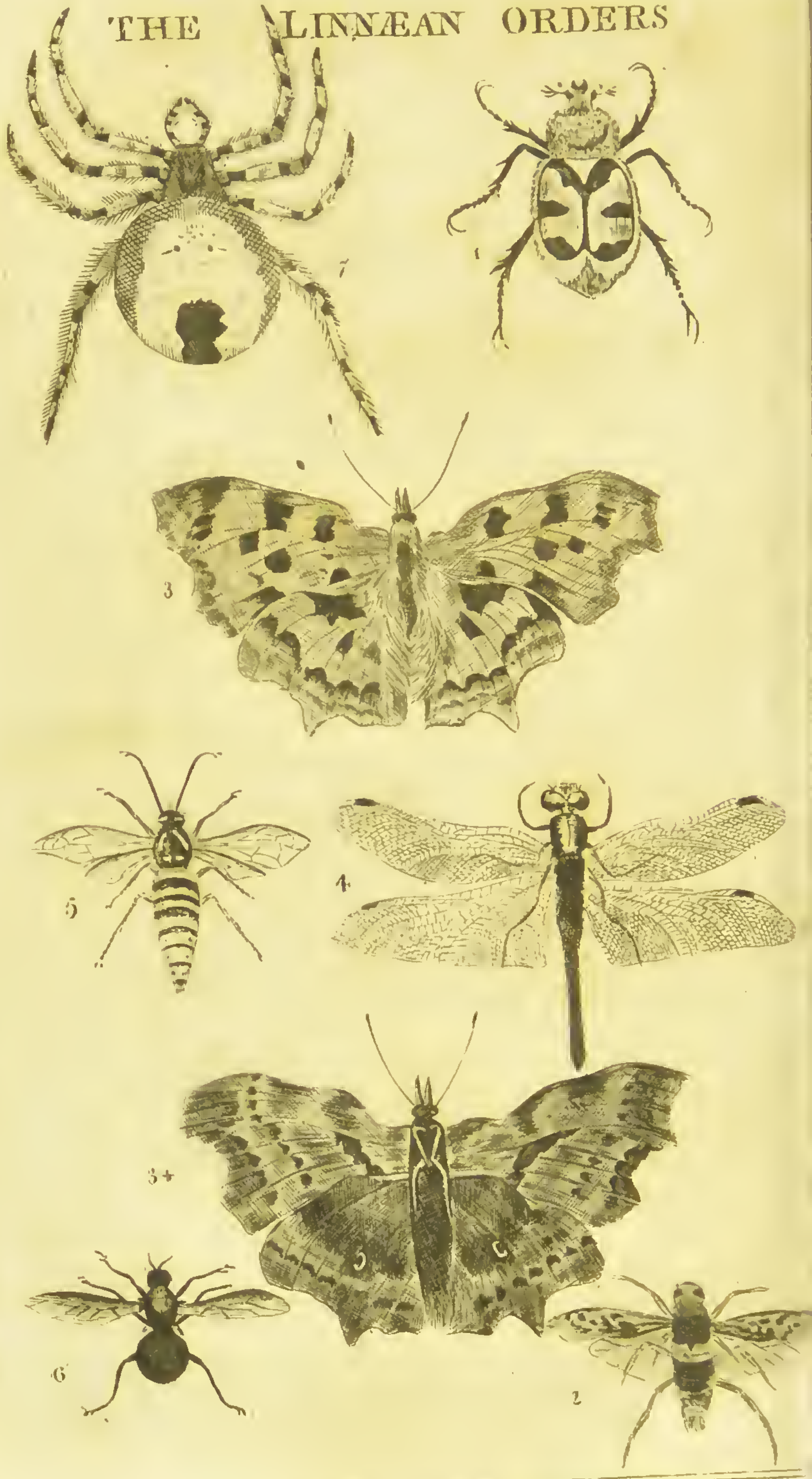
THE LINNÆAN ORDERS



OUTLINES

OF

BRITISH ENTOMOLOGY,

IN

PROSE AND VERSE.

WITH PLATES.

BY S. W. MILLARD.

> In his tam parvis, atque tam nullis, Quæ ratio! Quanta vis! Quam inextricabilis perfectio!
>
> PLIN.

> Quel sera le Buffon de cette classe de pygmées, qui nous entourent et s'agitent pérpetuellement autour de nous, et qui enfin, malgré nous attirent ou distraint notre attention dans tous les lieux de la terre et dans tous les instans du jour?
>
> *Faune Parisienne, Par. C. Walckenær.*

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TO THE

YOUTH OF GREAT BRITAIN.

◆

PECULIAR circumstances of family connection having, in a former instance, induced the author of the present work to offer the dedication of a poetical attempt,[*] then intended to be made public, to more than one gentleman, whose fortune would have enabled them, without inconvenience to themselves, to secure him from any risk of loss, at the same time that other circumstances rendered it a proper mark of respect from him to them, but without in return experi-

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[*] Should any curiosity be raised respecting the poem here alluded to, it is upon the usefulness of the Science of Botany, and entitled "THE BOTANIC NYMPH." The Science of Botany is personified in the character of a Nymph throughout the work. She is conducted by Linnæus after the expiration of a long childhood, through the important period of adolescence, and now

---

having attained maturity, is herself become the unerring guide to a correct knowledge of the Vegetable department of Nature. To this Nymph the different points of the usefulness of the Science are addressed. The following quotation was sent upon one of the occasions above alluded to:—

"As through the fields excursive roams the bee
From bloom to bloom collecting from their sweets,
And, faithful to the public-weal, he bears
His little burden to the common stock;
So, through the wide-spread countries of the earth,
Collecting aptly in his devious course
Whate'er in learning's theme, in fancy's lay,
Or labour's useful toil, may raise the scale
Or dignify the mind of man; may cheer
Him through the vale of life, or help to smooth
The way, the well-taught trav'ller roams; and adds
The honey of his flight to store the common stock.
But in thy flow'ry tribe oh beauteous Nymph!
Though health-restoring balm, tho' nectar'd dew,
Or spicy fragrance dwell within their veins;

encing that warm and cordial acquiescence, which he thought he had reason to expect; it has induced him to turn his attention from individuals to the public, and to address the present work to you young Ladies and Gentlemen, from whom no other remuneration is expected than the purchase of a book principally designed for your amusement and instruction. With the desire that it may prove reciprocally beneficial, he subscribes himself your

Sincere well-wisher,
The AUTHOR.

Though beauty's brightest beams adorn the flow'r,
Or sportive frolic wantons in their form,
How weak, how feeble, falt'ring is his pen
Without thy aid, to tell the varied tale;
By thee instructed, even Nature's self
Is vi'd; for, told in terms concise, and clear,
And simple, and replete with sense, as from
A polish'd mirror's faithful plane, with all
Its lineaments, the thing itself is seen."

PREFACE.

IT may be expected that the author of this little volume should apologize for offering it to the Public. An attempt however to amuse and instruct is a praiseworthy effort, and if the ability of a writer be unequal to his undertaking, the neglect which is likely to accrue is its just reward. In a work that contains nothing immoral, though the habits of the reader are not likely to be injured, nor his heart misled by the perusal, yet his taste may be vitiated : but that any work likely essentially to corrupt the public taste should obtain much regard, while our literature is subject to the control of public criticism does not appear to be probable. Under these impressions the author freely submits his performance to the candour of a discerning public, and to the decisions of that criticism which will determine whether or not it is worthy to hold a place in the literature of his country.

It may be necessary to say something of the work itself. The writer is not ambitious of converting proselytes to the study of that science to which he professes to have devoted a considerable portion of his time and exertions: he who is insensible to the just attractions of every department of Natural History, must be either very ignorant, or destitute of some of the finest and best sensibilities of our nature, the admiration of what is beautiful and excellent: but the number of British species of insects already known cannot be very far short of Five Thousand; the additions yet to be made by the industry of later collectors is comparatively few; and it is evident that to collect from the fields and to arrange in drawers such a vast number, especially as there are three or four varieties of most species, must require a great deal of time; and surely it ought to be a serious question with those disposed to engage in the pursuit whether the knowledge and interest, the intrinsic value, is likely to compensate the dedication of such a large portion of their existence. The author freely acknowledges, that though he believes it may have been right for himself and for some others to engage in this extensive, and certainly interesting pursuit, yet there are many branches of literature and learning, the cultivation of which he would prefer to recommend to the attention of young people who have but little leisure.

But although it is not desirable to recommend Entomology generally, and without restrictions, as a *principal pursuit*, yet it is very proper that every well-educated person should be acquainted with the outlines of this as well as of every other science; and it is with the view of giving, in an easy and pleasant manner, this general and elementary knowledge, that the present work is offered to the public.

To gentlemen of great leisure, independent fortune, and of a very decided partiality to Entomology, he would be disposed to leave its more exclusive and extended cultivation.

This work contains, FIRST, An Introductory account of the Linnæan System of arrangement in Entomology, and also a concise account of the more recent systems of Latreille and Dr. Leach, and some remarks on that of Fabricius.

SECONDLY, In Coleoptera the first Order, a complete Synopsis of the British Genera, arranged according to the Linnæan method, but including all such new Genera from the writers on Entomology upon the Continent, or by Dr. Leach of the British Museum, as, in the opinion of the author, will admit a distinct and intelligible character. Some of these consist of insects unknown in the time of Linnæus, others are formed out of his genera. The whole number of really Linnæan Coleopterous Genera, native to Great Britain are only Thirty-Two; Mr. Marsham added Sixteen, making the whole number Forty-Eight: but still, his included numerous species which did not accord with his generic characters. The species thus differing from the generic characters under which they were arranged, have been separated and formed into new genera by Lamarck, Latreille, Dr. Leach, and other Entomological writers. But in the fervour of establishing new arrangements, they have in the opinion of the writer, separated not only those which really did not accord with the Linnæan generic character, but also many which were best distinguished by it, and which have but a very obscure and insufficient one of their own. Two evils have thence arisen, the old genera, however their characters may be altered, are weakened by the proximity of species, which cannot well be distinguished as separated from them; and the new genera create great perplexity to the learner by their obscurity. Besides, the additional names in such instances, are dead and useless weights upon the science. It is true indeed, real and certain as these evils are, they are not always perceived in the new systems, for their characters are dispersed in so many dependent and connected parts that the integrity of the old ones is frequently lost: it is impossible to separate their characters from their systems.

From this it appears that the paucity and insufficiency of the Linnæan and Marshamal genera, and the too great number, as well as the perplexity of those of more modern writers, left the author no other alternative in drawing up the Synopsis of British Coleoptera but to form the genera after his own judgment. In doing this however, it is necessary to observe, that the generic characters of Linnæus and of

Mr. Marsham are never weakened; whatever they inserted is retained, if it had any force and significancy when applied by close examination to their respective species.

The new genera he has admitted are such as did not accord with the best character that could be given to the old ones, and have no affinity to its true species. Thus, for instance, Chrys. Boleti of Linnæus and Marsham has *perfoliated* Antennæ, whereas the Chrysomela genus is described with moniliform Antennæ; so that it does not accord with the character, neither has it any natural affinity to the Chrysomela, but is in all respects distinct from them; he has therefore considered it a separate genus, with the name Diaperis, given to it by Fabricius, Oliver, Lamarck, and Dr. Leach. And in like manner of several other instances.

It has not been the author's desire to extend the number of genera beyond their just limits, but distinctness and accuracy require that dissimilar things should not be associated. The old compound genera Scarabæus, Curculio, &c. as they are distinguished by a very good character, in which all the species agree, he has retained.

The number of British Coleopterous genera according to his difinitions is Eighty, including the Forty-Eight of Mr. Marsham, as he left them or perhaps improved as to character, but altered by taking from them species which that character would not describe.

In drawing up this Synopsis the author has never been guided solely by the descriptions to be found in books, but in every instance has examined the insects themselves from his own cabinet.†

Thirdly.—A few examples in Coleoptera are quoted, either of genera or species for particular illustration. To each of these examples the author has given a verse not taken from the writings of others, but of his own composition. Many more verses similar to those here inserted, are written both for the order Coleoptera and likewise for the other Linnæan orders; the publication of them will of course depend on the reception which those now offered may experience.

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† There are about two exceptions to this, where the character is borrowed from Samouelle's book, and acknowledged to be so.

No work has been more consulted by the author, (except indeed the descriptive books of Entomology,) than "The Introduction by Kirby and Spence," which, as it has already passed through several editions, he presumes it is unnecessary to recommend, however his own practical experience, has often supplied the matter coincident with the authority of that work.

It would indeed be a disingenuous vanity, unbecoming of the author were he to quote a long list of authorities which he has never seen, and perhaps may never have an opportunity of consulting. The difficulty of procuring some, and the expensiveness of other books on Entomological Science, has necessarily confined his reading within a very limited compass; and when the Systema Naturæ of Linnæas, the Coleoptera Brittannica of Marsham, the Monographia Apum of Kirby, the Genera Insectorum of Latrielle, the Synopsis of Berkenhout, Samouelle's late work on Entomology, and a volume taken from the Edinburgh Encyclopædia written by Dr. Leach, the Fawne Parisienne of Walckener, Tracts by Dr. Leach, and perhaps occasionally a few others, are named, the fields alone remain to complete the sources of his information; except indeed, that sometimes gleanings of information may have been obtained from acquaintance or from correspondence.

Of the expensive works on Entomology, it is sufficient to state that the beautiful, and he believes accurate, representations by Donovan, (some of the numbers of which he has seen,) amount to Eighteen or Twenty Pounds; that the Fawna Germanici of Panzer is also Twenty Pounds; that a publication either Dutch or German on the Linnæan Cimex, and different works on Lepidoptera are proportionably expensive, and therefore do not appear very likely to fall into the hands of individuals, like the author, of but moderate fortune. The System and Works of Fabricius, particularly his Philosophia Entomologia, the Lepidoptera of Haworth, and Tracts on particular genera by foreign writers are among the works he has endeavoured without sucess to procure.

In the poetical part, which, whatever may be its merit or defects, has been his principal delight, he has had very few friends to consult; to the critical remarks of an individual, a gentleman well acquainted with English poetry, and well qualified in many respects to give an enlightened judgment on poetical composition, he is principally indebted; to that individual he takes the present opportunity of returning his grateful acknowledgments. But neither the gentleman here alluded to, nor any one else, have done more than to point out the faults, which, if considered by the author to be such, he has himself endeavoured to remove by making suitable alterations.

Before closing these introductory observations, it may not be amiss to notice the objections to which this part of the present attempt may be liable, in the opinion of those who are disposed to cavil against the application of poetry to any description of subjects not entirely consecrated by prior and acknowledged success.

The author has been told that insects are very little known, and therefore that poetry upon them is likely to be uninteresting from its obscurity. He replies, that it is not his intention to write a poem upon all insects indiscriminately. Of the instances at present chosen, the majority are quite common; and it can scarcely be supposed that there are any individuals who do not know, or have never met with the Evening Dor, (Scarabæus stercorarius, mutator, &c. for more than one species bear this English name,) that flies about constantly in the early part of the evening, during the Spring, Summer, and Autumn; the Cockchaffer, (Scarabæus melolontha,) so common in May; the Lady-Bird, &c. And, that where the insect or insects chosen are less known, as in Sylpha, Curculio, &c. they are nevertheless very common; and may easily and almost at any time (except perhaps in the depth of Winter) be found and learned;—besides that it is not necessary, in order to understand the poem that more should be known than what the verse or the account connected with it will explain. He would moreover be willing to hope that the style and manner will be found easy rather than obscure, and that some merit is due to the novelty of the attempt.

It has also been alleged that insects only furnish one moral reflection, or in general but one, and that when it has been said that their existence is right because the Supreme Being thought fit to create them, all has been said that can be said about them, and therefore for this reason they are unfit subjects for poetry. This however he denies; and rests conscious that whoever is disposed candidly to peruse the few instances now offered to the public, will find it incorrect.

The moral of the Sylpha is to be contented with the lot assigned us or with our rank in life; the Hispa alludes to the disappointments of life; the Glow-Worm to the beneficial manner in which female influence may be exerted: these and others which might be pointed out, have no reference whatever to the chief, and as it has been supposed, or at least asserted, the only moral that their history can supply.

That the Creation in general, as well as the Insect department in particular, contains a grand, interesting, and affecting display of the wisdom and beneficence of the Deity is certainly true; but surely it is very extraordinary if this circumstance, which ought to infuse grandeur, enegy, and beauty into our contemplations and effusions, should render that subject unfit for poetical composition. The former part of the assertion in this instance is not correct, for the habits and peculiarities of insects are exceeding various, as well as their appearances; and of themselves, in the author's judgment, furnish abundant and varied scope for poetical exertion. Neither is the manner in which they display the wisdom of the Supreme Being merely one subject, for it is represented under a great variety of different modifications, and in different ways.

Whether the few poems now offered to the public are all alike and differ in nothing but metre, (for this too has been asserted,) the author submits to the judgment of the candid reader. He can however assure him that he believes those written but not published have an equal claim to dissimilarity.

It has also been asserted that Science cannot with propriety be united to poetry. Now, if by Science we are to understand so far as the word is applied to an arrangement of insects, the bare and starch definitions, or the mere names which distinguish the species, or the connection of the genera, then indeed the author acknowledges that it is not only not fit for poetical composition, but also, that if it did not extend farther, if this comprehended the whole of the Science of the Natural History of insects, that it would then be trifling, contemptible, and perhaps useless. *But this is not the case*, this is only and no more than the basis of the superstructure; the metamorphoses, habits, singular and often extraordinary peculiarities of species; their relative connection among themselves; the effect they have upon the property and person of man; and the various affecting and often enlarged views that the contemplation of them afford to the thoughtful individual, respecting the wisdom, power, and goodness of the great Author of all:—These points, and such as these, constitute the real Natural History of Insects: and with what are they combined? with the Scenery of Nature under all its modifications; the vast, the wild and dark forest; the impenetrable wood; the beautiful meadow, adorned by the hand of cultivation, and smiling in the vernal beauty of its early expansion, strong in summer or rich with the maturity of autumn: and will any one dare to assert that such subjects are unfit for poetical composition? if he does he will boldly and foolishly deny those to be poetical subjects which often furnish the sweetest graces, and most beautiful parts of our best and most approved writers.

To conclude, it has been asserted that insects when treated of poetically, do not supply associations pleasant to the man of reading and to the scholar; and that ladies so far from being likely io approve poetry on such subjects, in general regard insects with a dislike amounting almost to abhorrence. With respect to the latter, there are no doubt many insects which the Entomologist would consider unfit to be handled familiarly by the delicate female, (some of which she may here contemplate at a distance and in security,) at the same time it is often a groundless prejudice and a weakness; and so far it is desirable it should be removed by just and enlarged views of the subject. With regard to the former, it is clear that it must depend on the knowledge and ability of the writer; pleasant or useful associations, and classical remembrances may be united with *any* subject by simile, allusion, or episode; and are no more excluded from Insect-poetry than from any other species of composition.

It would ill become an individual, whose life has been and is devoted to the acquirement of knowledge,—who amid the conflicts of ill-health and the difficulties of confined circumstances, has spent his time in travels and in labours, with the hope and view of being at some time instrumental in the promotion of Natural Science, to stand in dread of liberal criticism; on the contrary, he is anxious to receive its enlightened intimations and to attend to its instructions. Nevertheless as among those who wield the powerful weapon of public criticism, some may be found whose views and sentiments do not coincide with his own, he will take the liberty of concluding by a quotation from the MSS. poem already alluded to, only desiring the candid Reviewer to apply the sense of what is here said of the lily to insects.

" And you ye Critic Band, whose fiat leads,
Guardians presiding in the Realm of Truth,
Alike protective of the letter'd weal
And honest efforts of th' aspiring bard;
Whose voice forbids to soar or else directs
The course, with candour judge nor deem my verse
Obtrusive on those greater thoughts which erst
Have happier pens employ'd; but think! oh! think
That he who guides all-powerful in the storm,
And rules unbounded in the sway of worlds,
Has also cloth'd the lilies† of the field.

† *The reader if he pleases may alter the last line thus,—*
Has also formed the insects of the field.

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EXPLANATION OF THE PLATES.

PLATE 1, TO FACE THE TITLE-PAGE.

Fig 1, Scarabæus fasciatus, for an example in *COLEOPTERA.*
2, *HEMIPTERA:* Notonecta maculata.
3, *LEPIDOPTERA:* Papilio comma alba.
4, *NEUROPTERA:* Libellula Scotica.
5, *HYMENOPTERA:* Vespa Anglica.
6, *DIPTERA*: Musca Ephippium, *Linn.*——Odontomegia Ephippium, *Latr.*
7, *APTERA:* Aranea Betula.

PLATE 2, TO FACE PAGE 132.

Fig. 1, Scarabæus mutator.—The Dor or Evening Clock.
2, Scarabæus melolontha.—The Cockchaffer.
3, Scarabæus auratus.—The golden or Rose-chaffer.
4, Lucanus Capreolus.—The Stag Beetle.
5, Silpha mortuorum.—The Grave Digger.
6, Hispa mutica.
6† Hispa mutica, with the Elytra and Wings (which are very short) expanded.

Note.—Between and above these two figures is a magnified representation of an antenna of the same insect.

7, Coccinella Cacti.—The Lady-Bird.
7† The Larva of the same.

Note. This species is abundant on Vaccinum Myrtillus by the Sea-side in the Neighbourhood of Swansea. I have not found it in other situations, and as Vacc. Myrt. does not appear to be much if at all attacked by the Aphis, I doubt its having the habits common to most of the species of the same genus.

8, Curculio Germani.
9, Curculio floccosus.

PLATE 3, TO FACE PAGE 216.

Fig. 1, Lampyris noctiluca.—The Glow-Worm, the male.
1† The Female.
2, Carabus Catenulatus, *Marsham*—Monilis, *Leach.* *Query, Whether it be really Monilis of Fab?*
3, Dytiscus marginalis, with the Wings open.—The Water Beetle.
4, Dytiscus marginalis the male.
5, Dytiscus marginalis, the female.
6, Larva of Dytiscus marginalis.
7, Pupa of Dytiscus marginalis, in an excavation of earth formed by the Larva.

Note.—This figure is taken from an excavation actually formed by the Larva whilst in the author's possession; the figure within the excavated earth is the Pupa to which that Larva had changed; at the side of it is the exuvia of the Larva.

OUTLINES
OF
BRITISH ENTOMOLOGY.

INTRODUCTION.

> "A good system of Insects, containing all the known species, arranged in appropriate genera, families, orders, and classes, is in fact a *Dictionary*, putting it within our power to ascertain the name of any given Insect, and thus to learn what has been observed respecting its properties and history, as readily as we determine the meaning of a new word in a Lexicon."
>
> KIRBY and SPENCE. v. 1. p. 47.

IN the Linnæan system of nature, Insects form a class, under the general head INSECTA. It comprehends all animals that do not breathe through the mouth, but by spiracles or breathing holes, placed along the sides of the body, and, that, in the perfect or final form of their being, are furnished with feet. Crabs and Lobsters were formerly included in this class; but, as they do not breathe from spiracles like insects, and are in all respects very different from them, they are very properly separated, and constitute a class of their own, called Crustacea. Many other alterations have been made in Entomology, or the Science of Insects, since the time of the great Linnæus, by Fabricius, Lamarck, Latréille, Dr. Leach, and other writers.

Amid this fluctuation, much new information has certainly been obtained. Vast accessions have been made to the strength, and amplitude given to the boundaries of the science; whilst many innovations yielding still to new ones, have, like the succeeding waves of a troubled and unsettled ocean, sunk quietly, and almost unobservedly, into oblivion.

As therefore that form which the science at present assumes, that dress which she wears in the lucubrations of modern Systematists, and to which novelty and fashion may have given a temporary prevalence, requires, to say the least, time to prove its convenience, usefulness, and durability; although it may be necessary to give some account of it, I shall not attempt either copiously or very particularly its delineation; but, with the exception relative to Crustacea, above spoken of, and with the exception also of such additions and alterations as appear to be suited to the present state of the science, I shall describe it in that simple and modest, but really useful garb in which it was arrayed by the wisdom of its great progenitor and founder.*

The Linnæan Orders of this class are seven, viz.

1. COLEOPTERA.
2. HEMIPTERA.
3. LEPIDOPTERA.
4. NEUROPTERA.
5. HYMENOPTERA.
6. DIPTERA.
   and
7. APTERA.†

---

* It may be objected that Linnæus was not the founder of Entomology, since insects were written upon by the ancients, particularly by Aristotle and Pliny; but as their knowledge of them was very imperfect, and as no very regular or correct system of classification was presented to the world, prior to that of Linnæus, I should be disposed to consider him as the founder of the science.

† To these Orders modern Systematists have added five others, viz. STREPSIPTERA, containing I believe two species, both of them very minute. DERMAPTERA, the single Genus.

1. COLEOPTERA. *Def. Elytra coriaceous or crustaceous and divided by a longitudinal suture.**

The Elytra (Elytron, singular) are frequently called Wing-Cases, and are so when there are wings, which is most commonly the case; but there are numerous instances of insects belong-to this Order which have no wings, and many in which the wings are imperfect; but, there is, I believe, no instance, except in the female of the Glow-worm, of any mature Coleopterous insect without Elytra, which are always either very distinctly marked by, or, as is generally the case, divided by a suture down the middle of the back, from its base at the junction with the thorax towards the end of the body. The instances where the Elytra are absolutely united at the suture are comparatively very few. Blaps Mortisaga, the slow-legged beetle, is an instance.

FORFICULA, the Ear-wig!! ORTHOPTERA, a division of Hemiptera. TRICOPTERA, a division of Neuroptera. APHANIPTERA, the Flea. This number 12, is given by Kirby and Spence, in a note in the first Vol. of their Introd. Dr. Leach has made 15, and since 16, without some of the Linnæan Aptera.

* The best circumstance to mark the Order, is the longitudinal suture of the Elytra, but it is not without exception, as the Genus Meloë has the Elytra slightly overlapping at the base, and separating in a curved line posteriorly.

But the beetles that have Elytra capable of opening but without wings, and again of those with very minute and imperfect wings, are numerous. The larger Carabi, and many of the smaller ones,. supply instances of both these cases. The Elytra in this Order are generally but not always opake, and appear to be designed to protect the upper surface of the abdomen, or the wings; and in those that fly, but very little, if at all, aid the flight. The Order Coleoptera comprises all kinds of beetles: such as Scarabœus, the dung-beetle; Carabus, the ground-beetle; Coccinella, the lady-bird, &c.

2. HEMIPTERA. *Elytra semicrustaceous, incumbent, or with the inner edge of one elytron lapping over, or crossing the other obliquely.*

The presence of the Elytra is by no means so constant in this Order, as it is in Coleoptera; there are some species entirely destitute of Elytra and wings in both sexes, of which Cimex Lectularius, the common house-bug, is an instance; and there are many, where the male is winged and the female is not. It must not however, be inferred from this irregularity, that the Order is incorrect: such anomalies are unavoidable in any system of arrangement. The inquirer will easily find familiar examples to illustrate the definition of the Order, and it will then be perceived, that the close affinity and analogy which prevails in the different species and families that compose it, is sufficient to justify the definition. This Order may be conveniently divided into two sections, viz.—

1. Containing Genera having a mouth with jaws; as Blatta, the cockroach; Gryllus, the grasshopper, cricket, &c.

2. Containing those which have a proboscis or sucker, but no mouth, with jaws, as Cimex, the bug, and field-bug; Aphis, the plant-louse; Notonecta, the boat-fly; Cicada, the frog-hopper; Nepa, the water-scorpion, &c.

These sections have been considered Orders by some Entomologists; the first called Orthoptera, and the last, Hemiptera. Simplicity is the greatest beauty, and when united with correctness, constitutes the highest excellence of arrangement and distribution in natural science. It should be recollected on all occasions of distinction in classification, that words, names, and divisions, though the former may be of Greek derivation, and carry the appearance of learning along with them, yet they do not constitute knowledge, and are only so far valuable, as they enable us to approximate nearer to nature, and also at the same time render the acquirement of a knowledge of the things themselves easier and more certain. This last is indeed the grand object of all classification; and every additional word or term which does not aid this great end, is not only useless, but burthensome, and ought to be rejected; on this principle, if on no other, I am disposed to prefer the Order in its Linnæan form. But in the present instance, there is another reason of considerable weight, and that is, that whatever be the signification of the new term, the definitions would have but very little meaning, and would be more adapted to perplex and obscure, than to do good, unless they adverted to the distinction in the mouth. Here the character is, it is true, very clear, but to admit it as a distinction of the Orders, when the other Linnæan Orders derive their name, and the greatest part of their character from the wings, is to innovate without cause, that simplicity, which is beautiful in itself, is suited to the dignity of science, and is beneficial to the learner.

3. LEPIDOPTERA. *Wings four, imbricated*

with fine scales, or covered with minute downy feathers. Moths and Butterflies.

4. NEUROPTERA. *Wings four; transparent, membranaceous and reticulated. No sting.*

It includes the Genera Libellula, the dragon-fly; the Phryganea; Hemerobius; Ephemera, &c. Note. The wings in this Order are in most instances naked, but the Genus Phryganea has them covered with fine soft hair, which renders them liable to be mistaken sometimes, by young Entomologists, for moths; but the distinction will be easily seen by comparing them with moths, and observing at the same time, the respective characters of the Orders.

5. HYMENOPTERA. *Wings four; transparent, tail with a sting.* This Order comprises the bee, wasp, Ichneumon-fly, hornet, &c.

6. DIPTERA. *Wings two, transparent.* Flies.

7. APTERA. *No wings.* Woodlice, spiders, &c.

TRANSFORMATIONS.

LARVA. The insects comprised in all these Orders, except Hemiptera and Aptera, and the Genus Libellula in Neuroptera, undergo a complete change or transformation in their external form and appearance, and in most instances, also in their manner of feeding, at different periods of their existence. The first state is that of an egg; from this, in due time, a grub or caterpillar proceeds, which in scientific language, is called a *Larva,* and more than one, *Larvæ;* because the real insect is at this time under a mask, that being the signification of the term. The Larvæ never have wings. They are very various, both in their appearance and manner of feeding, according to the genera and species; but bearing some general affinity to all the Larvæ of the same natural tribes, and even, though more distantly, to all of the same Linnæan Order.

LARVA in COLEOPTERA. The Larvæ in this Order, are grubs with a row of spiracles on each side of the body, and in the majority of instances, with six pectoral feet. But in some as in those of the Weevil tribe (Curculio) they are *apodous* or without feet. They are often soft, except the head, which is horny or testaceous, as in Scarabœus, and Lucanus; but in some genera, as in Silpha and Dytiscus, the body is elongated, and frequently nearly, or quite as hard as the head. The long, narrow, subcylindrical grubs of the meal-worm, and some elaters have also rather a hard and subtestaceous, or parchment-like skin.

But the most considerable difference occurs in the Larva of the earwig, which forms an exception to the definition both of the Larva and of the Pupa in this Order, as it is not a grub, and is never dormant, but in its changes resembles Hemipterous insects. The food of Coleopterous Larvæ is exceedingly various. Those of the Terrestrial Scaraboei, of many Staphylini, of Histeres, &c. live in animal stercor. Of the Melolontha-Scaraboei, of Elaters, and other species in the ground upon the roots of vegetables; those of Lucani, in decaying wood; of the Silphæ and others, on putrid animal matter; and many inhabit a variety of different situations, and subsist upon various substances and prey, which it is unnecessary, and might perhaps be tedious to enumerate in this place.

It is clear of most Coleopterous Larvæ, that they answer important and useful purposes in the economy of nature. If we cannot at present discover the use of others, we are justified both by reason and experience, in believing that they are beneficial, though our ignorance may hitherto have prevented our removing the veil that surrounds them.

HEMIPTEROUS LARVA. See Pupa in Hemiptera.

LEPIDOPTEROUS LARVA. In Lepidoptera, the Larva is a caterpillar or annulated grub, with six pectoral, eight abdominal, and two caudal legs; a pair of strong jaws, twelve very minute eyes,† and on each side of the body a row of spiracles, generally very distinct. Sometimes the anterior pair of feet are so short as to be scarcely discernible, and the caudal pair often appear like the end of the abdomen forcipated. Such is the common outline of the Lepidopterous Larva in general; but in some instances some of the legs may be obsolete, or wanting, or perhaps more numerous; and it may be observed, that the abdominal and caudal ones have been called spurious legs and prolegs; but as they really answer all the purposes of legs in walking and clinging, and also look like real ones, it appears to be more correct to consider and to call them so, with a distinction referable to the part of the body to which they belong. In other respects, Lepidopterous Larvæ are very variable. Some are naked, but marked with stripes of red, purple, orange, and other colours, or variegated with a variety of different hues; some are spined; others have rings and tufts of hair; some are entirely covered with hair; many are beautifully spotted, and the simple colours of those which are of one colour, are nearly of as many different shades as there are species. They feed upon the leaves of trees, plants, grass, and in fact, all vegetables; and also some of them upon woollens and some other things.*

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† Six on each side.

Lepidopterous Larvæ are often partially injurious to us, by their attacks upon our vegetables, clothing, &c. This, however, we may by proper attention and by the application of counteracting means, at least in a great measure, prevent. The injuries so done, cannot be regarded in the eye of philosophical discernment as counterbalancing the value of their general utility in the universal system; of their beauty, and of the life, which in their existence is diffused in animal enjoyment over the surface of the earth. These considerations acquire great weight when we reflect, that small as they are, we have been taught by the knowledge we have been able to obtain of the economy, habits, and history of insects, that even these minute beings are subject to the direction and control of an invisible power, and we know both from our views of nature, and from inspired authority, that this power is wise and good.

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* The Caterpillar of moths and butterflies completely throws off its skin, together with the jaws, &c. three or four times before it changes into the Pupa; this appears to be a difficult operation to the little animal, for it rests commonly for several hours both before and after it, and sometimes, probably from unusual obstructions; it is unable to extricate itself, and dies under the operation.

LARVA in NEUROPTERA. The Larvæ of the Neuropterous Genera, Libellula, Phryganea, and Ephemera, are aquatic; their appearance is beautiful and curious. For an account of these, and of the Larvæ of other Genera in this Order, see Neuroptera.

HYMENOPTEROUS LARVA. The Larvæ of Hymenopterous Genera, are short and simple grubs, mostly soft, and of a white colour. In the social families of the bee, the wasp, the hornet, &c. they are fed by the neuters. In other instances, as in solitary wild bees, the Ichneumon tribe, the saw-fly, &c. they are placed by the parent in a situation where they are supplied with sufficient food till the time of their change to the next state.

DIPTEROUS LARVA. In Diptera, the Larvæ, in the most familiar instances, are maggots, i. e.

soft, white, fat, and short grubs, without feet They live upon bacon, cheese, meat, carrion, stercor, &c. But in some instances they have tuberculate prominences, which answer the purpose of legs, and are somewhat analogous to the abdominal legs of Lepidopterous Larvæ, but shorter and less distinct. Some Dipterous Larvæ are found in water, as that of the Musca Chamœleon, which is long, flat, jointed, and with a hard exterior integument. Others trail along, in dirty places, are found in old wood, &c. some of these, as that of Musca Tenax, and the Tipula, the Crane-fly, are soft elongated cylindrical grubs, and have sometimes a long tail. In one Genus, the Œstrus, the parent fly deposits her eggs on the skin of cattle; of these one species, Œstrus Æqui, always chooses the fore part of the horse, so that they are taken into the mouth, where they live till the time of their change, and then pass off with the dung. Another species, Hæmorrhoidalis, selects the mouth of the horse; and a third, Œst. Bovis, the back of the cow or ox, where the Larvæ produce a purulent tumour, but fall to the ground when fully grown; and then change to the Pupa. The Œst. Ovis deposits its eggs in the inner margin of the nostrils of sheep; here the Larvæ crawl up the frontal sinuses, and when fully fed are discharged from the nostrils. The Œst. Cuniculi makes choice of the backs or skins of hares and rabbits; and in Sweden, and other northern countries, one species of this singular Genus is appropriated to the rein deer; and another, abroad, in warm countries, even to man. A writer who might be disposed to make the most of his subject, might easily draw an affecting picture of the sufferings of cattle, from these insect assailants; but he whose only object is the truth, will, perhaps, be inclined like myself to agree in the observations of Mr. Bracy Clark, a philosophical and accurate observer of nature, that although their minute attacks upon the large bodies of our domestic animals, certainly produce a visible agitation; yet probably they only operate as stimuli, beneficial to the health of the cattle, and are not productive either of considerable pain, or any serious injury.

Many other Dipterous Larvæ are found in a variety of situations, and under different appearances. There is no Linnæan Order where the habits of the Larvæ are more various; but, presuming that this general account is sufficient for the present, I shall defer the more particular consideration of them to a future opportunity.

LARVA in APTERA. See the Pupa in Hemiptera and Aptera.

PUPA. The next state is that of the Pupa, so called, because it is supposed to resemble a child in swaddling clothes. When a Larva has attained its full growth, it retires to some secret situation, casts off its skin, coils itself up into a very compact form, and thus remains motionless, and without food, for a longer or shorter time, till it is ripe for assuming its final state. This is the true Pupa, and though differing slightly in the different Orders, yet it is essentially the same in all of them. But the term has also been applied to a certain advanced stage of growth of the Larvæ of Hemipterous and of some Neuropterous insects, where no change takes place in their habits, and where there is no other difference from the Larva than the gradual evolution of the wing-cases and some new shades of colour being acquired with a new skin. It has even been applied, but with evident impropriety to designate the nearly mature growth of Apterous species, which in many instances never undergo more than a very slight difference either in their habits or appearance, except in gradually increasing in size, from their first leaving the egg, to their full maturity; and in other cases, where the change is more considerable, it is nothing like that of the dormant Pupa in the other Orders.

Insects may generally be stated to continue in the Pupa, from a few days to about ten months, varying according to the season of the year, and the nature of the species.

Coleopterous Pupa. In Coleoptera, the Larva state is usually long, and that of the Pupa short. In most Coleopterous Pupæ, the insect lies on its back, the future Elytra and wings are folded over the under part of the abdomen, and a thin pellicle covers the whole body: all the future parts are distinctly separate. In Floral Coleoptera, as the Pupæ are fixed in branches of flowers in the open air, besides the close pellicle above spoken of, they are frequently covered with a thin cocoon, as in Curculio Scrophularia, &c. The Pupæ of the Coccinella, generally attach themselves in secret and retired situations, and do not lie on the back.

In some genera or species, the skin of the Larva forms a covering to the Pupa: besides these there are also, probably several other variations. In most instances, the Pupa is buried in the earth, or remains in the decaying wood, or other situations, where the Larva had fed.

LEPIDOPTEROUS PUPA. The Larvæ and Pupæ of Lepidoptera, are in some respects the reverse of those of Coleoptera, as the Pupa state is often longer than that of the Imago and of the Larva put together.

Different species of moths and butterflies appear in succession at consequent periods of the year. The Larvæ produced from these, in most instances, feed for a few weeks upon vegetables, and then, changing into the Pupa, disappear till the next season. Several common species produce second broods, and in these, the summer Pupa is of short continuance; probably a week or two. But they, in common with almost all other Lepidoptera, continue in the Pupa during the whole of the winter. The few exceptions to this hibernal dormancy which occur in Lepidoptera are of those Larvæ which live within the interior of trees upon the wood, such as that of Phalæna Cossus, which is said to live five years in the Larva state; and perhaps of a few in other situations: but the instances certainly are not common.

The winter Lepidopterous Pupæ are in various concealments; many in the earth, in the cavities under trees; several under the bark of trees; some under stones; and a considerable number dispersed irregularly in the earth; several also of the commoner and hardier kind, are in corners and crevices about walls and outhouses.

The appearance and form of the Lepidopterous Pupa is subject to great variations, but it is always enclosed in an integument, and none of the parts are separate, though the head, antennæ, and wings may frequently be traced, especially when the animal is near coming out. The imaginary resemblance, which gave rise to the term, appears to me most discernible, after the insect has attained the consistency of its parts, if a portion of the integument be removed from the upper surface, by which the head, wings, and antennæ, (the wings being closely folded up) will be seen. The Pupa, besides the close integument which always surrounds it, in many instances, is altogether enclosed in another exterior envelopement, placed, not as its peculiar integument is, close to the body, but at a slight distance from it; this is called a Cocoon.

The Cocoon is in some species so hard, that the hand or finger can make no impression upon it, as in Phalæna Vinula, the puss-moth, where it is as hard as a board; in others it is tough like leather; in some it resembles parchment; and in several it is surrounded with silk, as in the Silk-worm. Sometimes a pellucid web, or an enclosure of leaves appear to supply the place of the cocoon; and in many species that bury themselves in the earth, the excavation where the insect lies, is so smooth and rounded, that it resembles exactly the inside of a cocoon. Rare instances sometimes occur of moths continuing double their natural time in the Pupa; thus I have had the Pupa of Ph. Vinula, remain till the second year after it had changed from the Larva, and then come out in perfection; so that it was shut up within its thick and impenetrable walls for one year and about nine months, continuing to live all this time without food or motion. I believe this same circumstance is said by Mr. Kirby in his Introduction, to have occurred to him; and if I recollect rightly, of the same species, but I am not certain if it were so, and as I did not mark the page, I am unable, from the manner in which the book is arranged, and from the want of an index, to find it again, without reading the whole book through for that purpose.

Nymph, Chrysalis, and Aurelia, are terms applied by some writers to the Lepidopterous Pupa, especially before the time of Linnæus; it is therefore proper they should be known, though it is better to keep to the Linnæan word Pupa.

NEUROPTEROUS PUPA. The Pupa in Neuroptera, is not the same in different genera. In the genus Libellula, the wing-cases are gradually evolved as they are in the order Hemiptera; and the Larva of this advanced growth, is sometimes called (though both unnecessarily and incorrectly) the Pupa. In Phryganea, the Pupa encloses itself in the habitation of the Larva. See Neuroptera.

HYMENOPTEROUS and DIPTEROUS PUPA. In Hymenoptera, the Pupa resembles the perfect insect, in the same manner as it does in Coleoptera. It is covered with a thin pellicle, and is commonly shut up in the cell or habitation of the Larva. The Dipterous Pupa is very similar to the last, but as the Larvæ of flies have in general no cell or habitation that can be enclosed, a cocoon is formed by their skins for the Pupa.*

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* This is sometimes called a Coarctate Pupa, Pupa Coarctata; and some Entymologists would not agree to its being a Cocoon.

Some aquatic flies remain shut up in the skin of the Larva, merely by its being closed without any other alteration.

LARVA and PUPA in HEMIPTERA. I have deferred speaking of the changes to which the species belonging to the second Linnæan Order. Hemiptera, are subject, because they are very different to those which take place in the Orders already spoken of. There is in fact no real Pupa in any of them. The Larva, as soon as it has emerged from the shell, resembles the perfect insect in the outline of its form and general appearance, and also in its mode of living; the principal distinction consists in its being wholly destitute of wings. In the progress of its growth, it several times casts its skin, and somewhat changes its colour, and also gradually evolves the cases which contain its future wings. In the first stage it is altogether without the appearance of the wing-cases, and that is usually called the Larva. When the first skin, or perhaps in some instances the second, is cast, the rudiments of the cases begin to appear, and it is then called the

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but it is obviously similar to the Lepidopterous Cocoon, and destined to answer a similar purpose, though not formed in the same manner.

Pupa; but as its habits of activity continue, and as there is no other difference in its appearance, excepting perhaps a variation in its colour, it is obviously nothing more than a grown Larva. However the calling it by the term Pupa is not liable to any error, though inaccurate, as it is generally indicated by either the genus or the Order being mentioned.

In APTERA no PUPA. As in Hemiptera, correctly speaking, the insects are not liable to more than two states, that of the Larva and of the Imago; so in the Linnæan Aptera, they are subject to only one; for in some species, there is absolutely no difference, except perhaps a shade in the colour, and none at all in the habits, between the most minute individual that has just escaped from the shell, and one that is maturely grown; and in other species, where the distinction is more strongly marked, it is nothing like that which characterizes the Larva and Pupa in the other Orders. The small Ones are therefore simply the young.

It has already been observed, that entomologists do not generally accord with me in the statement here given, of Hemipterous and Apterous Larvæ and Pupæ. However, having spoken of them, as I think, correctly, I shall now leave it to the reader; merely observing, that incorrect as it is, it is in my opinion much better to call them by the old terms, than to fabricate new ones; for the less numerous and more simple the terms of any science are, the more easily it will be learned; and in this case, there is no necessity for any peculiar term in order to discriminate the states.*

IMAGO. When the Pupa has attained the perfection of its state, the pupal envelopements, which invest aud surround it, are pierced by the insect, and separate so as to admit its egress; and shortly after it has emerged, it appears in the full perfection of its nature. As this is its ultimate and unchangeable condition, it is now called the Imago, that is, it is a true image of its species.

General Observations on the Metamorphoses. The changes from the Larva to the Pupa, and from that to the Imago, are not as they appear to be real transformations: for the integument, organization, and ulterior form of the future Imago, as well as the cuticle of the Pupa, are all contained, though only in an embryo state, within the body of the infant Larva. They grow with its growth, and become developed as the successive skins of the Larva are cast off, and afterwards, in some, as the Pupa approximates nearer towards maturity.

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* Linnæus called the Apterous Pupæ complete Pupæ; and the Hemipterous ones, semi-complete Pupæ; but these terms appear to me more objectionable, than simply calling them Pupæ; for surely a complete Pupa might be justly supposed to be one very complete in its agreement with the meaning of the word; i. e, complete as a Pupa. not in a state bordering on the Imago.

Division of the Orders into Genera and Species. Each order is composed of several different genera; each genus consists of one or more, but generally, of several species; and most species are subject to accidental varieties. Probably also there are hybrid varieties between species nearly approximating: but that hybrid varieties do not extend to any considerable extent, is certain by the uniformity of both species and their varieties.

SPECIES. A species is that which is distinct in its nature, and which though subject to slight variations, preserves its identity both in its appearance and character through successive generations and in different places.

GENUS. As, if we except one or two minute species found by Mr. Kirby, which he thinks ought to constitute a new Order, no insect has been discovered, but what is referable to one or the other of the Linnæan Orders, so also it is found, that in each Order there are several species that correspond in some other common marks of character. Those that thus agree are placed together, and constitute a genus; being all of them distinguished by one common name and character. Thus in the genus Chrysomela, "the head is small and inserted or withdrawing much into the thorax; the antennæ are moniliform and gradually and slightly increase in size towards the end, and the body is generally obtusely ovate, short, thick, and convex." Again, the Linnæan genus Scarabœus, is distinguished "by having the antennæ clavate, and the club divided into three or more leaves, which lie close and flat upon each other, and separate by a common spring!" The numerous species belonging to each of these genera, all agree in the particulars of the generic character, and are therefore easily referable to it. A genus sometimes consists of only two or three, and in some cases even of but one species; whilst in the Linnæan genera, some contain of British species, two or three hundred. This irregularity arises from the singular construction of some species, which will not admit their being associated with many others, and from there being several in others cases which agree together.

SPECIES. It appeared necessary to define the meaning of the term species, previous to giving an account of the genus in order to render that account clear, but it is now necessary to come back to the species. Every species of a genus is distinguished by a peculiar character of its own, and bears a distinctive or specific name. So that each insect has two names, the first, that of the genus it belongs to, and the second, that which is peculiarly its own. Thus, Chrysomela Polygoni, Chrysomela Hyperici, Scarabœus Mobilicornis, Scarabœus Auratus, &c. The specific name ought to always, and frequently does signify some circumstance or quality of the species; thus in the instances given above, Polygoni is from Polygonum Aviculare, Knot-grass, because the species feed upon that plant; and for a similar reason Hyperici is from Hypericum. Sc. Mobilicornis has a recurved, moveable horn, arising from the clypeus, and bending over the thorax: and Sc. Auratus, is often of a green-golden colour; the word auratus signifying golden.

As the genera in some Orders are numerous, it is convenient to have them divided into simple sections, without interfering with the character. Thus, Mr. Marsham has divided the British Coleoptera, according to the Antennæ, into six divisions. First, Antennæ Clavate, the club-lamellate; Second, Antennæ with the club perfoliate, &c. See the table of Brit. Coleopterous Genera.

To find out the GENUS *and* SPECIES. The genera being thus divided, saves the reader the trouble of looking them all over; and he has only to refer any insect he may possess, and of which he may wish to discover the name, first to the order, then to the division of the order, to find out the genus to which it belongs; having satisfied himself of the genus, the next point is to read the characters of the several species of that genus till he finds one that answers to his specimen. In this way, without any information from another person, any one may easily learn from a book of generic and specific descriptions, (such as that by Mr. Marsham, on the British Coleoptera) the name, character, and other particulars of anything he may wish to find; only always having a specimen to compare with the characters.

On Systems of Entomology. The distribution of insects into seven Orders, divided into genera and species as given in these pages, is the Linnæan system. Its usefulness has been tried and proved; and the native beauty of that simplicity which characterizes it, it is presumed, will be acknowledged by all who are not allured by the love of novelty or the influence of fashion to the preferable adoption of something new.

It is not therefore from a blind veneration for the name of its great founder, but from a solid conviction of the practical usefulness and real excellence of the system itself, independent of the august name which exalts and adorns it, that it obtains our approbation and esteem. Of its real and practical usefulness, the author is qualified in some degree to speak from his own experience, having himself discovered several hundred species by his own exertion and without the assistance of any other person, by Mr. Marsham's book. The species he had so made out, were afterwards, in a correspondence with Mr. Marsham himself, proved to have been correctly determined. If any well qualified and able entomologist would undertake to revise and correct Mr. Marsham's genera and species, and to describe such as have been found since his book was published, and to give us upon the same plan, an account of our native species in the other Linnæan Orders, a much greater service would certainly thereby be done to British Entomology, than can ever be conferred by the invention of any new system. If the object of systematic arrangement be to enable us to discover, by reference and examination, the things contained in that arrangement with as much facility and certainty as possible, then the experience of every practical entomologist must have taught him that we do not want any new system; I am sure at least that such is the sentiment of my own experience; for the Linnæan distribution of insects, though it may be acknowledged to be deficient and in some respects inaccurate, is still with all its faults and defects, in a great measure, competent to the purpose for which it was designed: it is a substantial edifice erected upon a solid foundation; and if the fitting up be not in all respects convenient, it is surely the part of wisdom to improve, but not to desert it.

There are however many other systems, and in some of these, the authors not content with the simple and useful divisions of Order, Genus, and Species already illustrated, have invented numerous new ones: they are indeed fond of a pompous display of them, and surround and decorate their arrangements with these trappings of learning, as the various and splendid titles of a proud but subordinate nobility, environ and adorn the pageant of monarchy.

Fabricius, the disciple of Linnæus, was the first to innovate the establishments of his great master in this department of natural history; and the first who presented to the world a complete system of insects, differing from that which had been promulgated by Linnæus. His system, although its Orders and Genera are much more numerous than those of the Linnæan one, displays the minute labour of painful and diligent research, rather than a vast exhibition of titular learning. Whilst Fabricius lived, and his names and method could be communicated from himself to others, personally, or by examples, and in the same manner from collector to collector, and from cabinet to cabinet, it was very fashionable among entomologists, and generally adopted, especially on the continent. But his system could not be learnt by a mere application to his books, without very minute dissections, an immense dedication of time, and vast labour; and but few unanimated by the splendid lure of becoming themselves the authors of great and renowned systems, can be found willing thus to devote their time, industry, reputation, and abilities, merely to learn the systematic arrangement of another person. Hence, when he died, his system died with him, or survived but a very short time afterwards, and is now very generally abandoned. The rise of new systems contributed also to the fall of that of Fabricius.

Fabricius, however, was a very illustrious Entomologist; and though we have given up his arrangement, the science of Entomology is greatly indebted to his labours.

Of the entomological distributions, which at present prevail, and which are now in their full bloom and highest fashion, it may perhaps be satisfactory to the reader to have some concise account. The principal of these are the systems of M. Latreille, and Dr. Leach. The one by the latter is evidently, and I suppose, confessedly, derived from that by M. Latreille, but so altered, as to become almost a new system. The one by M. Latreille, appears to have arisen like the phœnix of antiquity, from the ashes of that by Fabricius: but to have been nurtured in no small degree, by the physiological and anatomical investigations of Cuvier, Duméril, and Lamarck. The latter of whom had himself formed a system of insects, which was published prior to that by M. Latreille. These arrangements are called natural systems, and sometimes modern systems, which is the most correct appellation. The accounts of them shall be extracted as far as is practicable, without prejudice or partiality, from the publications which contain them.

It may however previously be observed, that the versatility of discrimination, so peculiar and so prominent in the French character, which has recently given rise to the entomological arrangements of Lamarck and Latreille, had before exerted itself in Botany, in the pursuit of a natural system of plants and vegetables, by Jussieu and others. But were they ever of any practical usefulness? But not only the author of the present work, but very many others, having like himself, found out the names, &c. of *many hundreds of British wild flowers*, by the distribution of Linnæus, can, from personal experience, testify to its practical usefulness. And it may perhaps be doubted, whether the modern systems of entomology, however gratifying they may be to those who have already learned the science, are much better adapted to lead the mere tyro to a knowledge of the genera and species of insects, than the natural systems of vegetables, are to teach the science of botany. But as I said before, I shall endeavour to give a short account of them, from the works of their authors.

Insects form the ninth Class of animals, without a vertebra, in Latreille's Distributio Naturalis, or natural distribution; and the second Class of which he particularly treats in his Genera Crustaceorum et Insectorum, or Genera of Crustacea, (crabs and lobsters) and Insects.

The Class Insecta, he arranges into two grand Divisions, and five Legions.*

1. APTERA. *No Metamorphosis.* This division in the connected divisions of the table at the head of the Class, is formed into two chief brackets, or bracketal divisions, into two sub-divisions, and the first of these sub-divisions, is again separated into two parts; and the whole constitutes four Legions.

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* Genera Crustaceorum, et Insectorum of Latreille.

Vol. 1, p. 61.

[*] ——— *Legion the 1st, Tetracera.*
——— *Legion the 2nd, Myriapoda.*
——— *Legion the 3rd, Acera.*
——— *Legion the 4th, Apterodicera.*

2nd. *Winged Metamorphoses. Legion the 5th, Pterodicera.*

I shall select *the third Legion*, to show in what manner it is afterwards treated. This *Legion* is composed of *Spiders*, and *Acari* or *Ticks*, which are very numerous; it is separated into two principal divisions.

[†] 1st. Body annulate, or at least with two separate segments. (Mouth composite, or particularly compound, not rostriform and simple, and produced into a tube. Feet, with a hip, Femora, tibia and tarsi in a distinct form.)

This division is separated into two principal bracketal divisions, these are again sub-divided, and constitute five families. The genera which compose the families, and the species which compose the genera, are again divided and subdivided.

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[*] As the characters of the Legions are rather long and unnecessary in a sketch that is designed merely to show Latreille's mode of arrangement, they are omitted.

[†] Vol. 1, p. 80. Corpus annulatum saltemve segmentis duobus discretis. (Os vel compositum, non rostriforme, aut simplex et in tubum productum. Pedes coxis, femoribus, tibiis tarsisque forma distinctis.)

[‡] The first division includes spiders, and the last ticks.

The second division is, viz.

* *2nd. Body without any separate rings, or segments. (Mouth composite or compound, and in most instances rostriform. Feet with hips, femora, tibia, and tarsi of a particular form, not distinct.*

This division is disposed of, into one principal division, which is again sub-divided into four families. The genera which constitute a family, and the species which make up a genus, are again divided, but not so much so, as in the first division.

In the table of the families belonging to the third Legion, Latreille gives also another distribution of the spider and tick kind, in which they are placed into three Orders; and these Orders are sub-divided, and formed into six families: four in succession, and the two last with new numbers. This is mentioned, though it does not properly belong to Latreille's own distribution, because it may serve to show how easily new systems are floated on the tide of science, whilst one alone is immutably established on an everlasting rock. But to return to Latreille, let us now take a slight view of his *Fifth Legion Pterodicera*. This is thus stated.

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* II. Corpus annulis segmentisque discretis nullis. (Os compositum plerumque rostriforme. Pedes coxis, femoribus, tibiis tarsisque forma speciali haud distinctis.)

LEGION THE FIFTH: Pterodicera.

Century the First.

Elythroptera.

Elytra two, entirely covering the wings.

Cohors the First.

Odontota, toothed.

Mouth with mandibles, maxillæ and lip. Wings folded.

Order the First, Coleoptera.

Wings transversely folded, Elytra crustaceous.

Section the First.

All the tarsi with five articulations.

Tribe the First.

Entomophagi.

* Palpi six; the articulations four, (the root at the base being considered an articulation) or three.

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* Palpi sex; labiales articulis quatuor (stipite baseos articulum referente) aut tribus. Vol. 1, 169. p. 171.

This tribe is then divided into three *families, Cicindeletæ, Carabici,* and the *Hydrocanthari.*[*]

Each family is composed of genera, and the genera of species and varieties. But sometimes the families, and also the genera, have simple divisions and sub-divisions. The family of Carabi are divided, first, into seven stirps or stirpites, and each stirps into genera. The genera are also divided and sub-divided.

The *Second Tribe* is *Saprophagi. Palpi Four.*

The families of this tribe are placed under two principal divisions. The first of these divisions is,

† 1. *Antennæ clavate; the club lamellate or pectinate, and folded; not terminate.*

This division is sub-divided, and that subdivision is again divided. These divisions include eleven families. The definition of the several families next occur. The genera which compose a family, are again placed in different divisions, and the several species which form a genus, are in like manner, placed under different divisions.

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[*] Latreille. Vol. 1, p. 172, 173.

† 1. Antennæ clava lamellata vel pectinata, plicatili, haud terminatæ.

1———————

A———————

Vol. 1, p. 235.

The *Second Division* of the *Tribe Saprophagi* is,

* 2. *Antennæ terminate, the club lamellate or pectinate, and folded.*

From this division I shall select a species, to show Latreille's generic and specific characters. Let us suppose a young practitioner in the science, to have found upon the Swansea sands, the *Scarabœus globosus* of the *Linnæan* system, but not himself knowing the name of the insect, he wishes to discover it, and makes use of Latreille's book for his guide. He will readily find that it belongs to the *Fifth Legion*, the *First Century*, and the *First Cohors*, not so much from finding it to agree with the characters of these divisions, some of which it would be rather difficult to make out in the little species before him, for this insect (the largest it is believed of its genus†) is not three lines in length; but because the elytra is coriaceous, which is Latreille's character of the *Order Coleoptera*, It must therefore belong to the whole of those divisions, of which the Order Coleoptera itself is only a part. It is then discovered to belong to the Order Coleoptera, and if he can get a distinct view of the feet, he will find the tarsus to have five joints, and this will determine it to belong to the *First Section* of that Order. The next point will be, whether it has four or six palpi; to ascertain this, will require rather minute inspection, as the palpi are very minute. We will however suppose that he has got over this difficulty, and found that it has only four, it therefore belongs to the second tribe *Saprophagi.* It will also be discovered to belong to the second division of that tribe. He has now to examine the four families which compose this division,—viz.

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* 2. Antennæ clava lamellata vel pectinata, plicatili, terminatæ.

Vol. 1, p. 241.

† i. e. of Latreille, and not the Linnæan genus.

* *Coprophagi. Family* 15*th.*

Antennæ lamellato-clavate, of nine articulations. Labium bifid, or profoundly emarginate. Mandibles membranaceous. Maxillæ with the external process or end broad. CLYPEUS SEMICIRCULAR.

* FAMILIA DECIMA QUINTA.

Coprophagi. *Coprophages.*

Antennæ lamellato-clavatæ, articulis novem, Labium bifidum aut profunde emarginatum, Mandibulæ membranaceæ. Maxillæ processu externo apicalive lato. *Clypeus semicircularis.*

* *Geotrupini. Family* 16*th.*

Antennæ lamellate, or tunicato-clavate, of eleven articulations. (Labrum and Mandibles exerted. Clypeus frequently in the fore part, prominent in an angle in the middle.)

Scarabœides. Family 17*th.*

Antennæ lamellato-clavate, of nine or ten articulations, and the mandibles always horny to those insects that have the antennæ of nine joints. Labium merely (tantummodo) emarginate. Maxillæ either horny and toothed, or membranaceous, elongate, narrow and hairy (setosæ.) CLYPEUS FREQUENTLY QUADRATE OR PROMINENT IN AN ANGLE IN THE FORE-PART IN THE MIDDLE.

* FAMILIA DECIMA SEXTA.

Geotrupini. *Geotrupins.*

Antennæ lamellato vel tunicato-clavatæ, articulis undecim. (Labrum mandibulæque exserta. Clypeus sæpius antice in angulum medio prominulus.)

FAMILIA DECIMA SEPTIMA.

Scarabæides. *Scarabæides.*

Antennæ lamellato-clavatæ, articulis decem aut novem et mandibulæ insectis quibus antennæ novem-articulatæ semper corneæ Labium tantummodo emarginatum. Maxillæ vel corneæ et dentatæ vel membranaceæ, elongatæ, angustæ, setosæ. *Clypeus sæpius quadratus, aut in angulum antice medio prominulus.*

* *Lucanides. Family* 18*th.*

Antennæ with the club pectinate, the teeth or lamellæ being somewhat parallel, and almost perpendicular to the axle.

As the Antennæ of our young entomologist's specimen are lamellate, and not pectinate in the club, it is clear that it cannot belong to the last family, he must therefore examine the remaining three. Here some difficulty will occur in ascertaining the number of joints in the Antennæ. However, by taking them off, leaving them to macerate in water till the joints are loosened, and then placing them under a good microscope, we will suppose that he has determined that there are not eleven joints and therefore that it cannot belong to the *Geotrupini* He has now reduced the examination to within the compass of two families. The Clypeus appears to the author to be rounded anteriorly, and therefore we may suppose our young student might think so too: should that be the case, he must look through the whole family of *Coprophagi*, in order to find the genus and species to which it is referable, and he will be disappointed, for it is not in that family. The remaining family *Scarabœides* must now be examined. The account of the genera in it, opens with a pretty long observation on the Labrum, Palpi, Labium and Body usual in the different species, which we have taken the liberty to omit. Then follow these divisions, viz.

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* FAMILIA DECIMA OCTAVA.

Lucanides. *Lucanides.*

Antennæ clava pectinata, dentibus lamellisve subparallelis et axi fere perpendicularibus.

Vol. 1. p. 211.

* *Family* 17. *Scarabœides.*

1. *Mandibles generally in the internal part horny; the internal side never broadly membranaceous.*

1. *Maxillæ with an internal process formed into a horny tooth, or with a horny crook in the place of this process: Labrum and Mandibles exerted and prominent.*

(Body Ovate. Thorax transverse. Elytra, very convex, arched and gibbous, considered in proportion to the other

* FAMILIA DECIMA SEPTIMA SCARABÆIDES.

I. *Mandibulæ fere penitus corneæ, latere interno numquam late membranaceo.*

1. *Maxillæ processu interno dente corneo instructo, aut unco corneo valido, processus hujus loco; labrum et mandibulæ exserta, prominentia.*

(*Corpus ovatum. Thorax transversus. Coleoptra, corporis aliarum partium ratione habita, maxima, gibboso-con-*

parts of the body; on each side deflected at the side; the end of the abdomen itself being overlapped.

Observation. Antennæ with the club ovate, transverse, and of three leaves. Clypeus very short. Maxillæ with an external process rotundato-sub-trigonal, membranaceo-coriaceous with spine-shaped ciliæ Palpi with the last articulation longer and thicker. The labial ones inserted in the lateral ends of the mentum.

190. Genus Ægialia.

Aphodius Illiger. Panzer.

Antennæ (clearly longer than the head, not entirely concealed) of nine articulations, cylindrical at the base, glabrous, or scarcely hairy, *Labrum* coriaceous, very short linear-transverse, *with the ends at the side,* rounded, the fore margine being broadly emarginate, briefly ciliate.

vexa, fornicata, ad latera undique deflexa, ano ipso obvoluto.)

Observatio. Antennæ capitulo triphyllo, ovato, transverso. Clypeus brevissimus. Maxillæ processu externo rotundato-subtrigono, membranaceo-coriaceo, ciliis spinuliformibus. Palpi-articulo ultimo ovali, longiore, subcrassiore. Labiales menti apicibus lateralibus inserti.

CXC. Genus. *ÆGIALIA.* *Ægialia.*

Aphodius, *Illig.*, *Panzer.*

Antennæ (capite aperte longiores nec omnino occultandæ) articulis novem; basilari cylindrico, glabriusculo aut vix piloso *Labrum* coriaceum, brevissimum, lineari-transversum, apicibus lateralibus rotundatis, margine antico late emarginato, breviter ciliato.

Mandibles greatly thickened at the base, afterwards arcuato-compressed, gradually narrower, at the end bifid. *Palpi,* the maxillary ones longer than the Maxillæ, and thin.

Maxillæ, with a real horny hook, dentiform at the top, bifid or two toothed, in the place of an internal process. *Mentum* crustaceous, elongato-quadrate, emarginate in the middle of the ends.

Body briefly ovate, in the hinder part, truly gibbous, or like to globose. *Head* rotundato-inflected, in the form of a hood. *Thorax* arcuate, rounded, with the sides inflected. *Tibiæ,* the fore ones with the external side clearly three toothed; the four hinder ones transversely cut or marked in the same side, or with transverse elevated lines; the hinder feet thickened; tibiæ with heels, being sub-spatuliform plates; all the tarsi with very minute claws.

Mandibulæ validæ, basi incrassatæ, deinde arcuato-compressæ, sensim angustatæ, apice bifido. *Palpi* maxillares maxillis, longiores, graciles. *Maxillæ* unco corneo, valido, dentiformi, apice bifido aut bidentato. processus interni loco. *Mentum* crustaceum, elongato-quadratum apicis medio emarginato.

Corpus breviter ovatum, postice valde gibbum, veluti globosum. *Caput* rotundato-inflexum, cuculliforme. *Thorax* arcuatus, rotundatus, lateribus inflexis. *Tibiæ* anticæ latere

Spec. 1. *Ægialia Globosa.*

Æ. Black, smooth; head granulate; elytra longitudinally striate and without punctures. It inhabits in France upon sea sands, &c.

Whether our young entomologist would be able by repeated dissections, and by macerating several insects for that purpose, completely to make out the whole of this long generic character, as well as the whole of the characters of the families, and of the various divisions which he must previously have examined, may perhaps be doubted, and the more so, as our ideas are fre-

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externo valide tridentato; quatuor posticæ eodem latere transverse inciso lineisve transversis elevatis; pedes postici incrassati; tibiæ calcaribus lamellas subspatuliformes referentibus; tarsi omnes unguibus minimis.

SPEC. 1. *ÆGIALIA GLOBOSA. Ægialie globuleuse.*

Æ. Nigra, nitida; capite granulato; elytris obiter striatis, impunctatis.

Aphodius globosus. *ILLIG. Coleopt. Bor., tom.* 1, *p.* 20.

Aphodie globuleux. *LATR. Hist. nat. des Crust. et des Insect., tom.* 10, *p.* 133.

PANZ. Faun. Insect. Germ., fasc. 37, *fig.* 2.

Habitat in Galliæ, Borussiæ litteribus maritimis; *Gessoriaco*, Dom. Baillon; *Burdigalæ*, Dom. Rodrigues.

Scarabæus lævigatus Fabricii forsan Ægialia.

Vol. 2, p. 96.

quently found not entirely to agree respecting the exact form and appearance of the very minute parts of insects. But it is presumed, that there are parts of these characters sufficient to induce our tyro to conclude his specimen to belong to the genus *Ægialia,* and that it is the species *Globosa.* To be certain of it, it is necessary for him to read the characters of the other genera in the family. As however, they are long, and subject to divisions, (the character of the next genus, Trox, being much longer than that of Ægialia, &c.) I shall not detain the reader longer with M. Latreille; but for the sake of forming a just estimate of the comparative practical usefulness of the Linnæan system and M. Latreille's, to the mere learner, let us suppose that he has recourse to a book of descriptive characters, similar to Mr. Marsham's, in order to find out this same species. Sc. globosus was not known as a British species, at the time when Mr. M. wrote; we must therefore make the specific character for him. In his Synopsis (Characteres Generum) the *first* division, Antennæ with the club lamellate* contains only two genera, and as it will be immediately quite clear, that the insect in question cannot be a Lucanus, it must of course be a Scarabæus, for the Antennæ are lamellate. It will therefore in two minutes, and with absolute certainty, be determined to be a Scarabæus, for it accords exactly with the character of that genus.—viz.

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* Lamella--æ-- a thin Plate.

* *Antennæ* clavate, club fissile.† *Fore feet* frequently toothed. (Entomologia Britannica of Marsham. Vol. 1. p. 4,)

This genus is arranged by Mr. Marsham, in three divisions,—viz.

A. Terrestrial. elytra covering or equal to the abdomen.

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* Perhaps the words of the generic character of Scarabœus might be advantageously altered, so as to render it clearer to the novice; but those minute parts of the mouth, which can never be discovered, even in large insects, without dissection, which probably are less entirely uniform than more expanded parts, and certainly are liable to be viewed in a different manner by different individuals, it would appear to be quite as well to omit; they may perplex and tease the patient inquirer to very little or no purpose, whilst others will give them credit and hold them of the validity of a character in the imagination, but it can scarcely be supposed they can ever be of any real service.

† Fissilis—e—that is or may be cloven; i. e. divided into leaves, but not with the thread of the antennæ running through the middle, as it does where it is perfoliate.

* *Scutellati.*

** *Excutellati,*

B. *Arboreal.* Body convex, elytra not covering the abdomen, or abbreviate.

C. *Floral.* Body depressed, elytra not covering the abdomen; or abbreviate.

Now as the elytra do cover the abdomen, and as the insect has a minute scutel, it will at once be perceived, that it belongs to the first division of the Terrestrial Scarabæi. And I conceive it would be very readily discovered by the following specific character, viz.

Sc. Globosus. Nearly apterous, with slight rudiments of wings: above black, and shining; body beneath and legs piceous; antennæ ferruginous, clypeus rugulose; thorax without punctures, the anterior margin with a ferruginous membranaceous edge; elytra impunctured and with smooth striæ: body small and posteriorly gibbous.

It runs about on sea sand, seizing and devouring very minute insects.

Thus, apparently, by a book on British Coleoptera, arranged according to this plan, (i. e. by the Linnæan method) a few minutes of easy application would be sufficient to enable the inquirer to find out the name &c. of his species, with full conviction of undoubted correctness.

Dr. Leach, of the British Museum, a very well known Entomologist, who possesses great activity and considerable information on the subject of insects, has adopted the system of Latreille, and in a volume of the Edinburgh Encyclopædia, under the head Entomology, has given it in an English dress.

In this translation, Dr. Leach has so much altered the arrangement, by turning the families into tribes, by omitting the tribes of the original work, as well as several of the divisions; by various additions of orders, genera, and new divisions, that though it is evidently derived from M. Latreille's work, yet it rather appears to be a new system. I hope I shall be excused if I once more conduct a young Entomologist through the process of inquiry already pursued, in searching for the generic and specific name of Scarabœus globosus, in the systems of Latreille, and of Linnæus; in a similar investigation of the same species, in Dr. Leach's book. His divisions are, Subclass 1. Ametabolia.

Insects undergoing no metamorphoses.

Order the First. Thysanura.

Tail armed with setæ.

Order the Second. Anoplura.

Tail without setæ.

Subclass 2. Metabolia.

Insects undergoing metamorphoses.

Century the First. Elythroptera.

Insects with elytra.

Cohors the First. Odontostoma.

Mouth with mandibles.

* Metamorphoses incomplete.

Order the Third. Coleoptera.

Wings transversely folded; elytra crustaceous, covering the wings, with the suture straight.

Section the First. Pentamera.

The number of joints in the tarsi is generally five, but in some of the aquatic genera the number is less.

This Section is then divided into tribes, and the tribes are composed of genera, with divisions, and in some instances, of families also.

There will be no difficulty in referring it to Coleoptera, and therefore to the prior divisions.

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* Article Entomology, in the Edinburgh Encyclopædia. Page 76, 78.

The next thing, is to find out the tribe it belongs to, and as many of the tribes bear in conjunction with more minute characters, the obvious and excellent ones of the Linnæan genera, (for a new tribe is often a Linnæan genus) they will be passed over almost with the same facility, as so many of Mr. Marsham's genera would be. We conceive however, the 18*th Tribe Coprides*, and its families, the 19*th Tribe Scarabœides,* and the 20*th Geotrupides,* would give him some trouble; as it is a very nice point to count the number of joints in such minute antennæ. However, if he should determine it to belong to the last tribe Geotrupides, it will then be necessary to examine the divisions, genera, and families, of this tribe. They stand thus,

[*] Family the First. Geotrupidæ.

No scale between the posterior angles of the thorax, and the exterior base of the elytra.

Division the first.

Thorax almost quadrate, more or less transverse. Mandibles entirely corneus.

Subdivision 1.

Labrum prominent even beyond the clypeus.

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[*] Ib. p. 97, 98.

Maxillæ interiorly armed with a horny hook, simple or bifid. Body nearly globular or ovoid. Elytra tumid embracing the sides of the abdomen.

Genus 155. Ægialia. Latreille.
Aphodius Panzer, Illiger.
Psammodius. Gyllenhall.

Antennæ distinctly longer than the head; composed of nine joints, the first of which is cylindrical, and a little hairy. Body nearly globular. Maxillæ with a bifid hook.

Sp. *Globosa.* Black, shining; head granulated; elytra striated, impunctate. Inhabits the sandy shores of the sea.

We shall not take up the reader's time by pursuing the examination farther, though it would be proper for an inexperienced Entomologist to examine all the remaining divisions, genera, and families, before he concludes his species to be Ægialia globosa.

A book has lately been published by Mr. Samouelle, on British Entomology, which, besides a very useful calendar of insects, contains also many other particulars that will prove serviceable to the practical or collecting Entomologist. A considerable portion of this work consists in what he calls a MODERN SYSTEM, (of insects

&c. I suppose, though the title is not very clearly given.) It is taken confessedly from the MSS. papers of Dr. Leach, and is very similar to the arrangement in the *Edinburgh Encyclopædia*, already noticed. But the tribes are here called *Families*, (as they were by Latreille,) and the termination of the name given to them is changed from *des*, to *dæ;* this is pleasanter. The greatest fault in the characters, appears to me, to be, that they are insufficient and obscure. Besides, I think they are not always drawn from the most characteristic parts. The other objections to this, are the same as to M. Latreille's system. It would only take us a few minutes to examine the character of the species which has already detained us, in the systematic arrangements we have considered. I shall simply state his characters. viz.

* Fam. 25. *Melolonthidæ* Leach, *Scarabæides,* Lat.

Antennæ ten-jointed, (in some nine) terminated by a lamellated club: Mandibles corneus in part; Clypeus triangular or quadrate: anterior tibiæ large and dentate; mentum not large.

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* The Entomologist's useful compendium. Article *Modern System*. p. 189, 190.

Stirps 1. No scale between the posterior angles of the thorax, and the exterior base of the elytra.

Div. 1. Thorax almost quadrate, more or less transverse. Mandibles entirely corneus.

Sub-division the First. Labrum prominent, even beyond the clypeus. Maxillæ interiorly armed with a horny hook, simple or bifid. Body nearly globular or ovoid. Elytra tumid, embracing the sides of the abdomen.

Genus 159. ÆGIALIA. Lat. Leach.

Aphodius Panzer, Illiger. Psammodius. Gyll.

Antennæ distinctly longer than the head, composed of nine joints, the first of which is cylindrical, and a little hairy: body nearly globular: wings none.

Sp. 1. Ægi. Globosa. Black shining: head granulated: elytra striated, impunctate.

Inhabits the sandy shores of the sea.

Now as the Antennæ are lamellate in several other families and genera, and as we do not consider the scutel to be so much square as anteriorly rounded; we think that considerable difficulty would be experienced by a mere learner of Entomology, in determining ANY THING respecting this species from these characters.

M. Lamarck, M. Latreille, and Dr. Leach, as well as Mr. Kirby, Mr. Spence, Mr. Mac Leay, and many other Entomologists, who have either wholy, or in part, adopted the new systems, are considered, and very justly, among the most eminently distinguished in the science of insects, of our own time. This certainly ought to create a distrust of our own sentiments, if they are not found to be in unison with theirs; and also a diffidence in opposing them.

Diligence of research, accuracy of examination, and ability of description, will be, we conceive, readily conceded on all sides to their leading writers.

But we will venture to suggest, that they may be sometimes too minute and too prolix. Whether their systems taken altogether, are likely to be permanent, and practically useful, or not, science in either case will gratefully acknowledge their labours, and repay them with the meed of praise.

ON THE

Different Parts,

OR

EXTERNAL ANATOMY

OF

INSECTS.

Tabular View of the External Anatomy of an Insect.

The Body is of 4 Segments.	*The Head is of 4 principal parts.*	*The mouth with jaws is of 4 parts.*	*The mouth without jaws is of 4 kinds.*	*The Members of the body are 4.*	*A leg is of 4 parts.*
1. Head.	Clypeus.	Jaws.	Tongue.	Feet.	Femur.
2. Thorax.	Antennæ.	Palpi.	Beak.	Poisers.	Tibia.
3. Breast.	Mouth.	Lips.	Proboscis.	Elytra.	Tarsus
4 Abdomen.	Eyes.	Tongue.	Haustellum.	Wings.	Ungnis

The Breast contains the *Sternum* between the legs and the *Scutel* on the upper surface; and internally, the strong muscles of the four hinder feet, and of the wings, but does not appear to be any way connected, as it is in animals, with respiration. The Abdomen has sometimes Appendages and Vesicles, and in Hymenopterous species, a sting. The Clypeus is a cap to the head. The Antennæ are two articulated processes, extending outwards from near the eyes; but in a few of the Linnæan Aptera, there are more than two. The Eyes are commonly two, but in Gyrinus they are so separated, as to be, or at least to appear four: Spiders generally have six or eight, and Lepidopterous Larvæ twelve, six on each side. The Jaws are often four, an upper and an under pair: but sometimes, there are only two; i. e. a single pair. The Palpi are two, four, or six, joined to the mouth. The Lips are little plates, and open like the lid of a box. Insects of many kinds have no jaws nor lips, but the whole mouth consists of either a tongue, a beak, a proboscis, or an haustellum. The Feet are six, unless in some Apterous species, and in Lepidopterous Larvæ, where they are more. The Elytra are two, the Wings two, and the Joints in the Tarsus commonly five; but in several species, not so many. Several species have also appendages at the end of the Abdomen, such as the sting in many Hymenopterous genera; the lanceolate appendages, and the visicles of the Staphylinus; the forceps of the Forficula, &c.

The BODY OF AN INSECT consists of *four* principal parts or sections, without including the limbs or members. These sections are mostly again divisible into other distinct parts some of which must be also subdivided.

The Sections of the Body are,

1. The HEAD. 2. THORAX. 3. BREAST.
4. ABDOMEN.

The limbs or members when spoken of altogether, may be comprehended under the term *Artus*, and may be considered to include 1st, *The Feet*, 2nd, *Poisers*, 3rd, *Elytra*, 4th, *Wings*.

Of the chief parts or Sections of the Body.

1. The HEAD is composed of many different parts which require separate descriptions. Considered altogether, it is mostly distinguished by its insertion into, or relative connection with the next part, the

2. THORAX; the second large articulation of the body; above it extends from the posterior part of the head, to the anterior part of the breast, or to the scutel and the base of the elytra or wings; and on the under side, from the head to the anterior part of the breast: the two fore legs are attached to the bony casing which covers the under surface of the thorax. The thorax is

always hard in proportion to the rest of the body; in coleopterous species, it is generally crustaceous or bony, and on the upper surface, is often either spined, crenate, or rugose; but in the majority of native British species it is simple.

3. The BREAST, *(Pectus)* This is that part to which the four posterior legs are attached on the under, and the scutel on the upper surface. The bony part extending longitudinally between the legs, and connecting them, is the Sternum.

The Sternum is sometimes elongated into a very distinct spine, as in Hydrophilus piceus, In Coleopterous and some Hemipterous species, the breast is distinctly separated from the thorax. and is situated anteriorly to the abdomen. In most insects belonging to the other orders, it is totally separated from the abdomen, and is united to the thorax. In these instances, the thorax and breast taken together, is called the TRUNK. But the term trunk does not appear to apply with any correctness, to those species which have the breast distinct from the thorax. On the upper surface of the breast is a small plate, resembling an escutcheon: it is very distinctly observeable, and is mostly of a triangular figure; this is called the *Scutellum*, or *Scutel.* In

Coleopterous species, the scutel is commonly somewhat triangular, with the base towards the thorax, and the oblique lines on each side between, and at the inner or sutural edge of the base of the elytra. In the species of the other orders it is similar, both in its appearance and situation.

The use of the breast appears to be to contain the strong muscles of the elytra and wings, or of the wings where there are no elytra, with which the scutel appears to be connected; and also those of the four hinder feet; but not at all as in animals, to assist respiration.

4. The ABDOMEN is the terminating part of the body, extending from the breast to the end. It contains the vicera and air vessels. The latter communicate with the external air, by a longitudinal row of spiracles on each side. In Coleopterous and some Hemipterous species, it is close to the breast, but in those of the other orders it is generally quite distinct, and is frequently petiolate, or joined to the trunk by a little narrow part like a stalk. The abdomen is composed of annular segments, which in some instances, particularly in the bee (Apis) and wasp (Vespa) tribes, are very retractile, so that the

whole of this part of the body is capable of exsertion much beyond its usual length. It is also susceptible of great distention. This construction of their form is of great service to them in their domestic economy.

The upper part of the abdomen is called *tergum*, or the *back;* and the under part *venter,* or the *belly.*

Attached to the abdomen, are terminal appendages, such as the bristles in the Ephemera; the forceps of the Earwig, the lanceolate processes of the Staphylinus, &c. An appendage of this kind is sometimes called a *tail.*

Sting. The last segment of the abdomen of many Hymenopterous insects, contains an instrument well known by the name of a *Sting.* It is both an offensive and defensive weapon; and in many species it is scarcely ever, or not at all used, except by the female, to make perforations to deposit her eggs. In the bee, wasp, &c. it is concealed, retractile, and enclosed in a sheath, and whenever the sting has pierced, an acrid poisonous juice is injected from a bag at the base of the sting into the wound, and it is this that renders it so pungent. The sting in some species is exserted, as in many of the Ichneumonides;

and in such instances, the puncture, if it should happen to sting one, which it sometimes does, is but little painful. It is serrated in the Tenthredo, and is said to be barbed in some species.

Vesicular appendages also occur at the extremity of the abdomen in some insects; as in the Staphylinus. They are supposed in such instances, to effuse an effluvia, protective of the insect against some enemy, liable to be affected by it, and are only occasionly exserted. An air bubble is also sometimes to be seen at the end of the abdomen of some aquatic species.

The *principal parts of the Head* are now to be considered. We may reckon four, viz.

1. The *Clypeus*. 2. The *Antennæ*. 3. The
Mouth. 4. The *Eyes*.

The Mouth will again require dividing, into its chief parts, I shall begin with

1. The *Clypeus*. This part is not in all insects, but as it is often used in description, it is proper to notice it.

The upper surface of the crustaceous, or bony part of the head, expands in some Coleopterous species, so as to protect, and frequently to conceal the mouth. It is very remarkable in many species of Scarabœus. It is only where its form gives it the appearance of a cap or shield to the mouth, that the term is correctly applicable; there is no such part in the insects of any other order, except Coleoptera, and in this Order, unless the name be given to the smooth and common surface between the eyes, it does not appear to exist, except in some of the Scarabæi.

2. The *Antennæ.* In all insects, except a few of the Order Aptera, from the front part of the head a little below the eyes, or from between or above, or somewhere near the eyes, on each side proceeds an articulated, flexible, and generally slender process or member, which is totally different to any thing in the structure of all other animals, except those of the class Crustacea, lately separated from insects. In their situation and external appearance, these parts bear some resemblance to the horns of quadrupeds. But their horns are immoveable, and like our nails and hair, insensible; whereas the parts of insects here alluded to, are capable of being bended with great quickness and facility in every direction, and are evidently organs of sense. They appear to be endued in an extraordinary manner with the ability of olfactory perception, and also

at the same time to convey tangible sensation; which they easily may do in the same manner as our nose and ears are sensible to the touch, while their principal office is to convey to the sensorium, or perceptive power, a peculiar sensation of their own. But in insects, from the numerous openings at the articulations of these parts, as well as from their numerous pores, and as it is probable there is a nervous communication up the middle of them,* it seems likely that they are not as our nose and ears are, rather dull to the impression of contact, or merely possessing sensibility, common to every part of the body, but on the contrary, that at the same time they convey in a very lively manner, both the sensation of smell, and that of the touch. It is therefore apparently, on account of their great delicacy, and high sensibility, that they are so often contractile, and that insects are so careful to keep them concealed when they are not wanted; or if they cannot do that, that they take so much pains to keep them clean. Of the last named circumstance, the author has been a frequent witness. But the operation of passing these parts through the mouth &c. for the purpose of cleaning them, is so common, that it is presumed most persons, (especially Entomological Collectors) must have had opportunities of witnessing its performance. From this account we see how very erroneous and improper it is, to call them horns, as many ignorant people do. And as no English name has been given to them, we must make use of the scientific one Antennæ, and in the singular Antenna: by practice, these, and words of this kind borrowed from the Latin, and still retaining their Latin form and signification, will become naturalized and really, though not aboriginally, English words.*

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* A Filament resembling a nervous chord, appears to connect the articulations of the Antennæ of some Coleopterous insects. But this does not appear to be generally the case, and it has been stated, "that the nerves terminate at the base of the Antennæ, and that the articulations are hollow, but lined with a soft watery substance." If this statement be correct, it is probable that the watery matter spoken of transmits sensation, like a nerve, and perhaps with greater sensibility and quickness.

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* All *terms of science*, taken from the Latin, ought, in our opinion, to be thus used, and not anglisized, as we in compliance with common practice, and the opinion of a gentleman, to whom some part of this work has been shown, have done with the words Spiracula and Spiraculæ, having changed both these and some others, into mere English words, as 'Spiracle' and 'Spiracles:' were the Latin termination retained, the uniformity of scientific language would be better preserved; but an explanation would be necessary to the English reader. If

The *Antennæ* are parts of great consequence in description, and ought always to be particularly attended to. There are several kinds of them, as

* 1. *Clavate,* ending in a club,

The *Clavate Antennæ,* are with the club of four different kinds, viz.

1. *Fissile,* divided longitudinally into leaves. *Scarabœus.*

2. *Pectinato-fissile,* or with leaves, continuing on one side like the teeth of a comb. *Lucanus.*

3. *Solid,* not divided. *Coccinella.*

4. *Perfoliate,* divided horizontally into leaves with the main thread of the Antennæ running up the middle of the leaves, (stringed.) *Hydrophillus.*

They also frequently partake of more than one, or only imperfectly of one of the characters, and

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may be added, there are many words, not scientific terms, which are incorporated into the body of our language, but still retain the Latin termination, as Genius, Genii; Genus Genera, &c. See Lindley Murray's Grammar, p. 52.

* The derivation of these words may easily be found in a Latin Dictionary; they are Clava--æ--a club. Fissilis-e, cleft or slit. Pecto, to comb. Pecten-inis, a comb. Perfoliatus, per through, folium-i a leaf. Monile-is-n. a necklace; and formo-are. Seta, a bristle. Pectinate, from pecten. Serrate, from serra-æ, a saw; prismatic is an English word. Arista-æ, the beard of corn, &c.

are then distinguished by the Latin word *sub*, a little, or somewhat being united to the term, as sub-solid, sub-perfoliate.

2. *Moniliform*, like a necklace or thread of beads. *Chrysomela.*

3. *Filiform*, uniformly, slender like a thread. *Crytocephalus.*

4. *Setaceous*, somewhat thicker at the base, and tapering towards the point. *Dytiscus.*

5. *Pectinate*, resembling a comb or a feather. *The male of Elater, pectinicornis, and of many moths.*

6. *Serrate*, divided into short teeth, like those of a saw. *Buprestis.*

7. *Prismatic*, shaped like a prism. *Sphinx.*

8. *Aristate*, with lateral hair. *The Fly.*

Besides these distinctions, there is also a considerable variety in the form of some of the parts and articulations; and as, has been observed before they are often either partial or mixed in their characters.

3. The *Mouth*, it is either with jaws and composed of four chief parts, or tubular, and of quite a different description. The parts of a mouth with jaws are,

1. The *Maxillæ or Jaws.*

There are two pair of jaws in many insects, including most *of the Coleoptera, viz.

1. The *Superior Jaws.* (Maxillæ superiores.)
2. The *Under Jaws.* (Maxillæ inferiores.)

The upper pair is hard and corneus, or bony, and is commonly curved, pointed, and bent inwards at the end something like a reaping-hook, it is also toothed in many insects. Some authors distinguish this pair by the term Mandibulæ, Mandibles; they are however real jaws, and bear a much stronger resemblance to those of animals, than the next pair. The under jaws are soft, membranaceous, ciliate, and often with one or two hooks at the edge. Both pair act in concert in mastication; the latter appear to be designed chiefly to press the juices from what has previously been torn and chewed by the superior pair. They are very distinctly shown in the Cicindela and Carabus.

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* Notwithstanding the sonorous word *Odontostomata* used by Dr. Leach, Latreille, &c. it is a fact that a very great number of the Coleopterous species, all of which are included within the reverberation of this deep-toned word, are totally without those crenations in the upper jaw, which are called teeth.

2. The Palpi or Feelers. These are appendages to the mouth, very similar to the Antennæ in their ordinary structure, but commonly much shorter. They are mostly either four or six in number, but sometimes only two : in shape somewhat filiform, or thicker in the last joint; but variable. In Coleopterous species, they are attached to the lower lip, and under jaws ; and are sometimes called labial and maxillary, according as they are situated. Like the Antennæ, they appear to be organs of sense, and of a very similar nature.

3. The *Lips* are distinguished into

1. The *Upper Lip.* (Labium superius.)

2. The *Lower Lip.* (Labium inferius.)

The term Labrum has also been used, but whether synonymous with the proper term labium, does not appear very clear.

The jaws move laterally, but the motion of the lips is, not as some have stated, like ours up and down, nor lateral, but resembling the motion of a trap-door, or the lid of a box with hinges, when opening.

In the middle sized Carabi, (called Harpalus, in the new systems) and many other Coleopterous species, a thin crustaceous, or coriaceous plate extends from the anterior part of the upper surface of the head, and immediately below, and between the eyes, over the upper and front part of the mouth ; it is susceptible of a slight degree of motion, like that of a lid to a box with hinges, so that it is pushed upwards and forwards when the insect takes its food. This is the *Upper Lip*. It is distinguishable from the upper crustaceous surface of the head, or the Clypeus which it joins, and often resembles by its capability of motion, whereas the Clypeus has no motion distinct from that of the head. The upper lip is similar in other instances, but is frequently obscure.

The *Lower Lip* resembles the upper one, but in some instances is less evident from its situation, and in part membranaceous. At the point of this lip, the middle or second pair of palpi are fixed, and sometimes there is also another minute process, called the Ligula.

The Lips do not appear to be constant in all insects, the large Carabi have the lower lip very distinct, but the upper one either does not project beyond the clypeus, or front of the head, or is wholly wanting. A similar deficiency appears in many other instances. The membrane which lines the esophagus, connects the jaws and lips, so that the mouth of an insect with jaws, when thrown open, resembles the mouth of a bag, the jaws being thrown back on the opposite sides, laterally, and the lips, thrown forward on the opposite sides between them, while the membranaceous lining, more or less, fills up to a cylindrical form, what would otherwise be square, or somewhat flattened.

4. *The Tongue (Lingua.)* Many insects that have a mouth with jaws, have also a tongue. Coleopterous species in general, have either only a very minute process, which is more properly called Ligula. But in Hymenopterous insects, such as the bee, the wasp, or the humble bee, this organ is in great perfection, and is exactly suited to their mode of life.

Besides the parts enumerated some Hemipterous species have also membranaceous appendages which protect the mouth.

The *Mouth without Jaws*, is of *four* different kinds.

1. *A Tongue*, (Lingua) as in the *Butterfly*.

The *Tongue* of the butterfly and moth, is of two concave filaments, which unite by a longitudinal suture, and form a cylinder. When the insect is at rest, it is neatly rolled up in spiral convolutions beneath its head.

2. *A Beak, (Rostrum,)* as in *Cimex* the *Bug.* The *Beak* is an articulated tube bent under the breast.

3. *A Proboscis;* as in *Musca domestica,* the *House-fly,* and other species of the same genus. The *Proboscis* is terminated by a soft, fleshy spunge, which imbibes all manner of juices.

4. *An Haustellum,* as in *Tabanus, the Cattle-fly.*

The *Haustellum* is composed of two or more sharp, pointed, lanceolate tubes, or suckers, enclosed in a bi-valve sheath; and is used to draw blood from animals. It is constructed differently in different flies, and often resembles the beak, but is more compound.

We have already seen that Hymenopterous insects have both a tongue, (lingua) and also jaws.

The *Eyes* which form the *fourth part of the* head, do not require much farther observation than is contained in the note to the tabular view. Some Hymenopterous insects, besides two eyes, have small round points on the fore part of the head, called *Stemmata,* which are supposed to be organs of sight.

For an account of the microscopic appearance of the eyes, see the History of the Libellula in Neuroptera.

The members of the body are now to be considered, they will not detain us long. We enumerate four, viz.

1. *Legs.* 2. *Poisers.* 3. *Elytra.* 4. *Wings.*

The legs in all insects, except a few of the Linnæan Order Aptera, and some Larvæ, are constantly six in number; viz. two Thoracical, and four Pectoral, or else they are all Pectoral. A foot is constantly of four distinct parts, viz. 1st. The *Femora,* which extends either immediately from the breast or thorax, or from a small and obscure joint which unites it to one of those parts, to the second division of the leg, the *Tibia.* The *Tibia* extends to the 3rd division, the *Tarsus* or foot; the *Tarsus* or foot is terminated by the 4th and last part, the *Unguis or Claw.* To these four parts a fifth has been named, viz. Coxa, the joint that fits into the thorax or breast, and unites the femora to the body; this joint is very visible in the middle leg of the Staphylinus, and in some other instances; but in many, and perhaps most insects, some or all of the legs appear to have the femora fitting immediately into the body, without any connecting part that can be considered a distinct joint. The femora answers to the thigh; the tibia to the leg; and the tarsus to the foot; the terms are taken from anatomy. The Coxa is absolutely an additional joint, where it is really to be found, but the femora seems often to articulate into its own socket, as the femoral bone (os femoris) in the human subject, does into the hip bone, (os innominatum) and in such instances there is no Coxa.

The shape of the legs and feet is always adapted to the habits of the insect, and as well as the mouth, many serve to indicate them. Thus in the large terrestrial Scarabæi, the fore legs are broad, spined, for scratching in the earth; while the hinder ones are arched and able to push back with great force, and all of them are remarkably powerful. Those of the Melontha-Scarabæi, are also adapted for digging, though more slightly, and of the female more so than the male, and the legs and claws of both are fitted for clinging. In both these instances the female digs in the earth to make the nest for her Larvæ. The legs of the Cicindeli and Carabi, which run very fast, are long and slender, and strengthened for running by a peculiar appendage at the base of the thigh. And in aquatic species they are either expansive and foliaceous as in the Gyrinus, or broad and ciliate as in the Dytiscus, provided their habit of swimming and diving require such a construction; but some aquatic species cling very much to water plants, or move along the sides and bottoms of waters, without much swimming, and in that case their form is different. In like manner in other instances the feet are suited to the peculiar habits of the species.

The *Poisers*, (Halteres,) are peculiar to some insects of the order Diptera.

They have been supposed to contribute to the equilibrium of the body in flight. But they appear to be too small for this purpose. They are two, short, filiform, clavate processes, one on each side of the breast, and are very distinct in the Tipula, the Crane-fly. It is remarkable, that numerous flies which have not the poisers, have a scale nearly, or exactly in the same situation: I should conjecture that both relate to something in the internal muscular construction of the breast, and perhaps by that connection they serve to balance the body in flight.

3. The *Elytra.* It does not appear necessary to add to what has already been observed, upon these members of the body, in speaking of the characteristic distinctions of the Orders, Coleoptera aud Hemiptera.

4. The *Wings*: of these also notice, has been taken, in speaking of the different Orders. It has been supposed, that characters might be drawn from the variety in number, form, disposition, and arrangement of the filamentous or nervous divisions in naked wings: and this appears probable, but it requires a hand of no common ability, to draw characters entirely new, from parts before very little or not at all noticed.

ORDER I.

COLEOPTERA.

* * *

"Let the man, whose wild imagination would put that chimæra, Chance, in the place of his Creator, look into the works of his hands, and he must blush at his own absurdity; to me, these living testimonies of the being and attributes of a God, have ever appeared infinitely superior to the best arguments, that the understanding of man has been, or indeed ever can be able to advance. In these we read at once his existance, and his praise, in pages written by his own hand."

Inspector, No. 64.

* * *

Ess. Def. *Wing Cases divided by a longitudinal suture, and in, or, nearly in an horizontal or flat position.*

A Synopsis of British Coleopterous Genera.

This Synopsis includes all the Linnæan genera, and those of Mr. Marsham, and as many by Latreille, Leach, or other authorities, as appear to have a sufficient claim to generic distinction, and will admit of a simple, but real and intelligible character.

⁂ Note. In this Synopsis, the compound genera, such as Scarabæus, Dermestes, Carabus, Curculio, &c. are retained as simple genera; because it is conceived that the generic character given to them is much clearer, more intelligible and definite, and therefore more practically useful than any character could be if they were separated into a greater number of genera: at the same time the simple divisions into which the species of those genera are separated, will accomplish all that could be obtained by so many genera, and the burthen of useless and often barbarous names will be avoided.

A. *Antennæ clavate; club lamellate.*

1. SCARABÆUS. *Club of the Antennæ,* consisting in a knob of divergent and collapsing plates; divided into

1. TERRESTRIAL. *Elytra* covering the Abdomen.

Copris, Onthophagus, Aphodius, Ægialia, Trox, and Scaraboeus. Latr. Illiger.

2. ARBOREAL. *Elytra* not covering the Abdomen. *Body* convex.

Melolontha. Hoplia. Latr.

3. FLORAL. *Elytra* not covering the abdomen. *Body* depressed.

Cetonia, Trichius. Latr.

For a further illustration of this genus, see Scaraboeus.

2. LUCANUS. *Club* of the Antennæ gradual, the leaves on one side only, and resembling a comb: *Mouth* with exerted jaws.

3. * SYNODENDRON. *Antennæ* the same as in Lucanus. *No exerted jaws.*

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* In Mr. Marsham's simple but *intelligible* and accurate distribution, this genus is united to the preceding one, in consequence of the agreement in the character of the Antennæ: and it must be confest, that as their habits are the same, and as it bears 'prima facie' a great resemblance to some species of Lucanus, that it was much more naturally placed, than among the Melolontha Scaraboei, where it is placed by

B. *Club perfoliate.*

4. DERMESTES. *Head* inflected under the thorax: *Antennæ* short, retractile; the *club* composed of three or four close and thick perfoliations: *Thorax* convex or sloping at the sides; five joints in the tarsi, except in the last division, in which the species have only four.

1. *Body* oblong: *Palpi* very short.

Biturus, Attagenus, Megatoma. Lat. and Leach.

2. *Body* subspherical: *Palpi* obvious.

Sphæridium. Latr.

3. *Body* ovate: *Palpi* short but visible: *Antennæ* acute at the point.

Phalacrus, Languiria, Agathidium. Latr.

5. TRITOMA. *Head* sub-inflected: *Antennæ* moniliform, except the three last joints, which form a perfoliate club: *Body* oval or oblong-ovate; four *joints* in each tarsus.

Tritoma, Triplax. Latr. *Dermestes.* Marsham.

6. CISTELA. *Head* small and much inflected: *Antennæ* with the five or six last joints close and flat perfoliations: *Thorax* convex: *Elytra* wrapping over the sides of the abdomen:

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the new system, or modern system. For there is an entire and absolute dissimilarity in its appearance, real character, and habits, from those of the Melolonthæ.

Legs arched, and falling flat against the abdomen: *Body* ovate, very convex above, and when the head and feet are withdrawn, according to the habit of the insect when anything approaches it, appearing much like a piece of dirt.

Throscus and *Byrrhus.* Latr.

7. DIAPERIS. *Head* small, inserted, and declining: *Antennæ* of eight regular, and nearly equal perfoliations, appearing like serratures on each side of the thread of the Antennæ: three close *joints* at the base, not perfoliate: *Thorax* curved inwards towards the Scutel, and without the three large punctures of Boletaria: *Body* obtusely ovate, thick and Chrysomela-like.

Diaperis. Fab. Lamarck. *Chrysomela.* Marsham.

8. ELEDONA. *Antennæ* perfoliate on *one side only*, or with serrated joints, except that the two last joints which are closely united, and much larger than the other joints, are sometimes slightly separated from the next on both sides; the third joint from the end is also next in size to the two first, and is larger than the lower ones: *Body* obtusely oval, and slightly convex: *Legs* short.

Eledona. Latr. *Opatrum.* Marsham.

9. BOLETARIA. *Head* subinflected: *Antennæ* gradually increasing in size towards the end with several closely perfoliate joints; the last joint the largest: *Thorax* convex, margined, and distinguished by three impressed dots at the base, the middle one of which is frequently obsolete and sometimes, perhaps, wanting: *Legs* thin and slight: *Body* oval or elongate-ovate.

Mycetophagus. Fab. Latr. &c.

10. *SCAPHIDIUM. *Head* small, inserted, and bending downwards under the thorax: *Antennæ* thin, the five last joints thicker, somewhat rounded and perfoliate: *Body* short, thick, ovate, or somewhat square, with the head and tail acuminate: *Legs* long and thin.

Scaphidium and *Scaphisoma*. Latr.

11. *CHOLEVA. *Head* bending downwards and flat against the thorax: *Antennæ* thin, some of the last joints gradually increasing in size towards the end and sub-perfoliate: *Body* ovate, or oblong-ovate, somewhat arched and acuminate at the extremities: *Elytra* covering, or nearly covering the abdomen, and acuminate or rounded

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* The species of this genus are numerous, mostly of a brown colour; and the thorax, elytra, and body, have a variable gloss apparently arising from very minute hairs.

at the ends: *Thorax* thin: *Legs* slender, and the whole body slight and fragile.

Choleva. Spence; Latr. &c.

12. PARNUS. *Head* terminating the thorax: *Antennæ* very short, of only two or three joints, one of which is attached like an exfoliation; the antennæ are usually completely withdrawn so close to the head as not to be visible: *Body* short sub-oblong-cylindrical.

Parnus. Marsham, Leach. *Dryops.* Latr.

13. SILPHA. *Head* inflected: *Antennæ* either with a thick perfoliated club, or increasing in size with a club of from three to five or six gradual perfoliations; the first joints of the antennæ generally at the base elongated, and the succeeding ones to the perfoliation rounded, subglobose, or submoniliform: *Thorax* resembling a shield: *Tibiæ* with spines: *Elytra* overlapping the abdomen at the base: *Body* large, broad and either flat or somewhat convex above. Is divided into

1. *Antennæ* with a thick quadri-articulate club.

Necrophorus. Latr.

2. *Antennæ* gradually perfoliate.

Necrodes. Oiceoptoma. and *Sipha.* Leach.

A part of Mr. Marsham's second division may admit generic separation under the name.

14. CRYPTOPHAGUS. *Head* terminating, sub-declining, and nearly triangular, with the base of the triangle against the thorax: *Thorax* in a line, or nearly in a line, with the elytra, and both thorax and elytra together forming the outer section, or about a quarter part of a cylinder, but somewhat depressed: *Antennæ* with a club of from three to five distinct perfoliate joints, generally of three joints; five joints in the tarsi: *Body* short and small.

Thymalus, Cryptophagus. Leach.
Silpha. Marsham.

Mr. Marsham's third division, I should also consider a distinct genus, viz.

15. CATERETES. *Head* terminating: *Antennæ* long and thick, with the first joint large and thick, the intermediate ones moniliform and ending in a club of three distinct perfoliations: *Thorax* rounded or sloping at the sides: *Elytra* short, depressed and abbreviate: *Legs* short: *Body* small, rather thick and short.

Cateretes. Latr. *Silpha.* Marsham.

NOTE. There does not appear to me to be five joints in the tarsi, but it is included in that division.

16. CORTICARIA. *Head* prominent: *Antennæ* with a club of two or three close perfoliations: *Body* linear and depressed: *Tarsi* with four joints in each. Length generally about two or three lines.

Monotoma. *Sylvanus* and *Lyctus.* Latr.

17. LATRIDIUS. *Head* terminating, subdeclining: *Antennæ* thin, rather long, with one or two joints at the base, larger than the others, ending in a perfoliate club of about three joints: *Thorax* depressed, somewhat oblong, narrower than the elytra, and not forming one surface with it: *Elytra* rotundate, sloping or subcylindrified at the external margins: *Legs* very thin and often rather long.

Latridius. Latr. *Corticaria.* Marsh.

18. SCYDMÆNUS. *Head* small, declining, not terminating nor inserted, but forming a very distinct section of the body: *Antennæ* long, gradually perfoliate, and ending in a joint much larger than either of the rest: *Palpi* clavate, mostly long, sometimes longer than the antennæ, and elbowed: *Legs* long, thighs generally thick in the middle: *Thorax* sub-globose, *Elytra* in some species abbreviate and depressed; in others rounded, gibbous, and covering the abdomen: *Body* always very small.

Scydmænus. Leach, &c.

This interesting genus (of which I have many species,) does not appear to have been known to Mr. Marsham.

19. ATOMARIA. *Antennæ* very thin, and perfoliate at the end: *Body* very small, ovate or hemispheric: *Wings* consisting of three bundles of fibres.

Atomaria. Leach.

NOTE. I am not certain whether this genus has ever been described, and I suppose there are still four or five really distinct genera among our very minute Coleoptera, which, as yet, have been unnoticed. I had the name from Mr. Miller, of Bristol, who received it from Mr. Leach.

20. SARROTRIUM. *Antennæ* from nearly the base, a regular and distinct perfoliation, fusiform, and surrounded with numerous close hairs: *Head* exerted: *Thorax* and *Elytra* oblong, slightly convex and rigid.

Hispa. Marsham. *Sarrotrium.* Leach.

NOTE. The head is oblong and obtuse, not triangular, and the superior maxillæ (mandibles) do not appear to me to be bifid at the extremity, but simple.

21. HYDROPHILUS. *Head* drawn out, and sloping from the thorax: *Thorax* and *body* convex: *Antennæ* with the first joint often rather thick, the intermediate ones filiform, and ending in a club of three or four thick perfoliations: *Principal Palpi* filiform, and generally longer than the antennæ: *Body* ovate or globose-ovate; *Aquatic;* divided into,

1. Thorax smooth.

Berosus. Spercheus. Hydrobius. Limnebius. Hydrophilus. Hydrous. Leach.

2. Thorax longitudinally rugose.

Helophoridæ. Leach: containing his genera. *Helophorus. Hydrochus. Octhebius.* and *Hydræna. Helophorus.* and *Hydræna.* Latr.

C. *Club of the Antennæ solid.*

22. NITIDULA. *Head* small and inserted: *Antennæ* with 2 or, perhaps, 3 joints at the base, somewhat large, but, apparently, not in the same proportion in all the species; the intermediate joints filiform; the club subsolid, triarticulate, globose and compressed: *Thorax* about as broad as the base of the elytra: *Thorax and Elytra* margined: *Body* short, ovate and depressed, or subdepressed: *Legs* rather short and strong.

Nitidula and Biturus. Latr. &c. *Nitidula* Marsham.

23. IPS. *Head* deflected; received into the thorax: *Antennæ* short and retractile; the club solid or sub-solid, conic-globose, and generally pointed: *Body* cylindrical or, perhaps in some few instances, ovate-cylindrical.

Hylurgus; Tomicus; Platypus; Scolytus; Hylesinus; Bos-trichus; Phloitribus; &c. Latr. &c.

24. HISTER. *Head* small, retractile within the thorax; *Antennæ* elbowed; the first part thick, incurved and enlarging towards the elbow, the second part short, filiform, and thin to the club; the club large, globose and compressed: *Elytra* shorter than the abdomen: *Body* thick, hard and nearly square or ovate-quadrate: legs contractile: tibiæ generally spined.

Hister of all authors but Dr. Leach, who has separated the species into 4 genera.

25. BYRRHUS. *Head* concealed under the thorax: *Antennæ* short; *Club* sub-solid, compressed and somewhat cylindrical: *Legs* contractile: *Tarsi* thin of 5 joints, which cannot be seen without a very good glass: *Palpi* very short: *Body* very small: oval and convex.

Anthrenus. Fabricius, Latr. Leach.

26. COCCINELLA. *Head* small and inserted: *Antennæ* thin, ending in a solid, ovate club:

Palpi short, ending in a thick, triangular, or hatchet-shaped club: *Body* hemispherical above, and flat beneath: *Legs* contractile and lying flat against the body: *Tarsi* with only 3 joints in each.

Coccinella. Lin. Marsham, Latr. &c. *Coccinella. Chilorchus.* Leach.

27. GYRINUS. *Antennæ* very short and thick: *Eyes* four: (the lower pair certainly proceed from the upper, but the separation is complete, and they are quite distinct.) *Fore Feet* long, hinder ones expansive and natatorial: *Body* ovate, convex.

28. CURCULIO. *Head* produced into a distinct rostrum: *Antennæ* sub-clavate, seated upon the rostrum: *Mouth* small, at the end of the rostrum generally concealed, and apparently without lips: *Body* generally an elongated convex, oval; in many species short and somewhat round, rarely cylindrical or sub-cylindrical. The principal division by Mr. Marsham, is into Longirostrès and Brevirostres, but the sub-divisions are so numerous, that in this Synopsis, they must be omitted.

It contains eleven or twelve genera in the system of Latreille, to which Dr. Leach has added several, and proposed more.*

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* It had long been the cherished desire of the author of this Synopsis, to divide our Coleoptera into *Tribes*, *Genera*, and *Species*; his intended Tribes being designed to be similar to Dr. Leach's Families, in the book lately published by Mr. Samouelle, or to those of Latreille. It was only from an entire conviction of its *impracticability*, that this plan was abandoned. The compound genera, such as Scarabœus, &c. naturally suggest this plan; and with these genera it may easily be accomplished, but it cannot be done farther without having recourse to obscure and insufficient characters, and very unnatural combinations: nor indeed without perplexing and burthening the science of Entomology. Thus as a tribe or compound genus, Curculio might be divided into the following seven genera, viz.

1. RHINOSIMUS. *Rostrum* broad and short: *Antennæ* simple, gradually thicker towards the end: *Thorax* smooth, somewhat heart-shaped, with the apex, (i. e. the base of the thorax) truncate.

Rhinosimus. Latr. *Salpingus.* Leach.

2. ANTHRIBUS. *Rostrum* short and broad: *Antennæ* simple, three joints at the end larger than the rest: *Thorax* rough, uneven, widest in the middle, perhaps somewhat between square and round, without being of any determinate figure.

3. RHYNCHITES. *Rostrum* cylindrical, or nearly cylindrical: *Antennæ* simple, with the last joints (frequently the three last, but sometimes more) perfoliate.

4. APION. *Rostrum* cylindrical; *Antennæ* either with a very short and indistinct elbow, or simple, but apparently simple, and ending in a short, solid, or subsolid, ovate and pointed club.

29. ATTELABUS. *Head* separated from the thorax by a distinct neck, and posteriorly attenuated: *Antennæ* simple, not elbowed, ending in an ovate club: *Thorax* anteriorly attenuated: *Abdomen* sub-quadrate and slightly convex: *Elytra* depressed on the back; convex posteriorly, and at the sides: *Legs* long.

Apoderus. Latr. Leach. *Attelabus.* Marsham.

NOTE. Mr. Marsham's Attelabus, Curculionides, belongs to the Rynchites division of Curculio.

5. CRYPTORHYNCHUS. *Antennæ* distinctly geniculate: *Rostrum* cylindrical, and bending close to the breast, *Legs* contractile.

6. CURCULIO. *Antennæ* distinctly geniculate: *Rostrum* permanently exerted and variable.

7. ORCHESTES. *Antennæ* fixed on the rostrum, either simple or geniculate: *Hinder Thighs* thick for leaping: *Body* small. Leapers.

These genera appear to be sufficiently distinct, either under the common head Curculio, as above mentioned, or as absolutely separated into simple genera, like the rest in this Synopsis. But the remaining genera both of Dr. Leach and M. Latreille, and other authors, are either of that description where nature did not require the separation, or where the artificial character will not support it, and which therefore as they only perplex and burthen scientific arrangement, it is wise to abandon.

D. *Antennæ moniliform; generally increasing in thickness towards the end.*

30. CLERUS. *Head* terminating and declining: *Antennæ* with the intermediate joints moniliform, and the three ultimate ones either an abrupt perfoliate club, or thick, somewhat round, and approaching to, or sub-perfoliate: *Thorax* convex, the posterior margin rounded: *Elytra* flexible: *Body* oblong somewhat cylindrical and depressed. Divided into.

1. The *Largest Palpi* ending in a triangular club. Cl: *Formicarius.*

Thysanurus. Latreille. Leach.

2. *Palpi* cylindrical or sub-cylindrical.

Opilus. Latreille. Leach.

NOTE. The joints in the feet do not appear to me to be five, nor the palpi to be otherwise than I have stated, though described differently by Latreille and Dr. Leach.

31. STAPHYLINUS. *Head* exerted and distinct: *Antennæ* generally somewhat between filiform and moniliform; in some instances between moniliform and perfoliate in the joints towards the end: *Elytra* generally covering about one-third of the abdomen, sometimes more, but always considerably abbreviated: *Abdomen* in

distinct folds, with a marginal ridge, and a channel on each side of the upper surface, and commonly ending in two caudal appendages: *Jaws* sharp, pointed, and frequently exerted: *Body* long and narrow: *Wings* folded under the elytra.

NOTE. This extensive, natural, and correct genus, contains eighty-six species in Mr. Marsham's Entom. Brit. In Latreille's system it is divided into twelve genera. Dr. Leach has enumerated no less than twenty-nine or thirty names for genera; but many of them, fortunately, are only names, and it is very evident that no characters can be found to accompany them. Perhaps Mr. Marsham's division, "*Thorace postice dilato.*" *Thorax with the hinder part dilated*" might form a separate genus, and his *Cicindeloidei*, might make another, but without totally doing away the grand design and end of all classical arrangement, viz. *practical usefulness*, so many perplexing genera, distinguished as they unavoidably must be by very slight and obscure characters, cannot, as I think, ever be admitted. The Rev. Mr. Kirby is said to have undertaken a monograph upon the British species of this tribe, and to have extended the specific descriptions to nearly four hundred in number, which he has disposed in several different genera. In addition to what has been observed, it is proper to state, that Dr. Leach has also given a new family, under the name *Pselaphidæ,* which contains the genera Dimera and Pelapus, of Latreille, and five others by himself. These all appear to belong to the genus Staphylinus, or perhaps they might form one, or even two genera with characters similar to those given in this Synopsis. Some of the species of this family are perhaps comprehended under my character of Scydmænus. They appear to be generally very minute.

32. PEDINUS. *Head* sub-exerted, the anterior or frontal edge notched in the middle: *Antennæ* distinctly increasing in size towards the end, the last joints nearly round: *Fore Tibia* expanded at the extremity towards the junction with the Tarsi: *Thorax* broad, and nearly one-third of the whole length of the body, or nearly one-half as long as the elytra: *Body* ovate.

Tenebrio arenosus, and Opatrum, tibiale of Marsham, &c. *Pedinus,* Latr, Leach, &c.
Opatrum, Leach.

33. TENEBRIO. *Head* sub-exerted, the

anterior edge straight, rounded at the sides, and not notched: *Antennæ* very slightly increasing towards the end: *Thorax* not one-fourth part as long as the whole body, or one-third as long as the elytra; *Body* oblong.

Tenebrio molitor.

34. CASSIDA. *Thorax* semicircular, and terminating the upper surface: *Head* small, and entirely concealed under the thorax: *Antennæ* with the base concealed under the thorax, thicker towards the end, with the joints rather flat, sub-moniliform: *Elytra* expanded much wider than the abdomen: *Body* above oval and convex, beneath flat: *Legs* rather short, tarsi somewhat expansive, and of four joints.

Cassida, Linnæus, Marsham, Latreille.

35. CHRYSOMELA. *Head* small and inserted: *Palpi* short: *Antennæ* gradually thicker towards the end: *Body* bluntly or obtusely ovate, short, thick, and very convex above; slightly convex beneath: *Tarsi* somewhat expansive, and of four joints.

Chrysomela. Linn. Marsh. Latr. &c.

36. HELODES. *Head* sub-exerted: *Thorax* oblong, and nearly flat; the anterior margin as wide as the posterior one: *Antennæ* as in

Chrysomela, or rather thicker at the end: *Body* oblong and but slightly convex: *Tarsi* of four joints.

Chrysomela, Marsham. *Helodes*. Payk. Oliv.
Fab. Leach.

37. HALTICA. *Antennæ* sub-moniliform, sub-filiform: *Body* short, small, ovate, and convex: *Hinder Legs* long, with the thighs thick. All the species leap,

NOTE. This genus is Mr. Marsham's third division of Chrysomela.

38. MELOE. *Head* exerted, inflected, and distinct: *Antennæ* with irregular articulations: *Thorax* narrow and rudely sub-quadrate: *Elytra* soft and flexible, with the sutural edges slightly overlapping at the base, and separating towards the extremity, abbreviate, and with the ends cut round: *Abdomen* generally large, often much swollen in the female: *Legs* rather long. The species are apterous, or without wings.

Meloe, Linn. Latr.

E. *Antennæ Filiform.*

39. CRYPTOCEPHALUS. *Head* small, so inserted, that only the face, or surface of the front (which is nearly flat and circular) can be seen; the face slopes under the convexity of the

thorax: *Thorax* very convex, the anterior edge forming nearly a circular border; the convexity in front projecting over, and, at least, somewhat concealing the face: *Antennæ* long, thin, and equally filiform: *Elytra* frequently longer than the body: *Body* short, thick, and cylindrical: *Legs* rather long, tarsi of four joints.

Chrysomela, Linn. *Cryptocephalus*, Marsham.
Latreille, &c.

40. CLYTHRA. *Head* sub-inserted and declining; the front not entirely flat: *Thorax* somewhat convex at the sides, with a slight and nearly equal border to all the margins: *Antennæ* thick and serrate: *Elytra* distinctly longer and larger than the body: *Body* oblongo-cylindrical: *Legs* somewhat strong, tarsi with four joints in each.

Cryptocephalus, Marsh. *Clythra*, Latr.

41. AUCHENIA. *Head* small and exerted: *Eyes* separating nearly, or quite as far as the width of the thorax, and sub-exerted or exerted: *Thorax* cylindrical, and distinctly narrower than the base of the elytra: *Body* oblongo-cylindrical: *Tarsi* of four joints.

Div. 1. *Antennæ* mediocral and thick, with the joints depressed, and nearly equal.

Crioceris, Latr. Leach, &c. *Auchenia*, Marsh.

2. *Antennæ* very fine and thin ; of the male, very long : joints nearly equal.

Crioceris, Latr. and Leach. *Auchenia,* Marsh.

3. *Antennæ,* mediocral, enlarging in size towards the end, with the last joint distinctly longer and larger than the rest.

Lagria, Latr. Leach, &c. *Auchenia,* Marsh.

42. GALERUCA. *Head* sub-exerted : *Thorax* somewhat flat, generally mucronate, or marked with impressions, short, transverse, and a little narrower than the elytra : *Antennæ* with the first joint small at the base and large at the extremity, somewhat in the shape of a pear : *Elytra* coriaceous or sub-coriaceous: *Body* short,oblong, rather thick and convex : *Tarsi* with four joints.

Crioceris, Marsham. *Galeruca,* Latr.

43. ENDOMYCHUS. *Head* small, sub-inserted : *Antennæ* rather long, the joints close, short, somewhat thick and sub-moniliform, the three last larger than the rest, and sub-obconical: *Thorax* nearly flat, somewhat quadrate, the anterior edge remarkably angulate and semicircular towards the head : the anterior margin distinctly narrower than at the base : *Body* short, ovate, and slightly convex above ; *Legs* moderate : *Tarsi* of only three joints.

44. CRIOCERIS. *Head* bending downwards, and exerted : *Antennæ* long, joints somewhat elongate, and obconical, (i. e. resembling a cone with the base uppermost) flattened or somewhat cylindrified : *Palpi* visible, generally obvious, the last joint often thicker than the rest: *Thorax* plain, slightly convex, transverse, rather short, with the edges anteriorly rounded at the angles, or without angles : *Body* oblong, the extremities rounded, or oblongo-ovate, and somewhat convex : *Legs* slight and thin.

Div. 1. *Thorax* posteriorly flattened, with two deep impressions at the posterior margin : *Palpi* ending in a large hatchet-shaped joint.

Melandrya, Latr. Leach. *Crioceris*, Marsh.

2. *Thorax* convex, generally without impressions : *Palpi* ending in an hatchet-shaped joint.

Cistela, Latr. Leach. *Crioceris,* Marsham.

3. *Palpi* ending in a sub-cylindrical joint.

Dascillus and Elodes, Latr. Leach. *Crioceris,* Marsham.

45. SERROPALPUS. " *Antennæ* filiform, *Body* almost cylindrical, and very long."

Samouelle, page 195.

46. ORCHESIA. "*Hinder feet* formed for leaping: *Antennæ* clavate: *Body* elliptical."

Mordella Boleti, Marsham.

Ib. page 195.

NOTE. These two genera appear to deserve generic distinction; but I have not seen the species, and am therefore obliged to content myself with the above notice of them.

47. BRUCHUS. *Head* small, much deflected and retractile, but distinct; anteriorly very slightly elongated; the elongation not sufficient to be considered a rostrum: *Antennæ* gradually thicker towards the end, and frequently serrate: *Thorax* convex, and anteriorly attenuated: *Elytra* rather shorter than the body, and sub-truncate: *Body* short, sub-ovate and thick: *Legs* long, especially the hinder ones, which are somewhat arched: *Tarsi* with three or four joints.

Anthribus and *Bruchus*, Latreille and Leach.

Bruchus, Linn. Marsham, &c.

48. PTINUS. *Head* bending downwards and under the thorax: *Thorax* somewhat rounded, unequal, and gibbous: *Body* short and either cylindrical or sub-ovate: *Tarsi* with five close joints, and mostly ending in a fine transverse claw. Divided. viz.

1. *Antennæ* not much longer than the thorax, and shorter than the body; the three last articulations larger or longer than the rest: *Body* cylindrical.

Anobium, *Ptinus*, Latr.

2. *Antennæ* longer than the thorax, pectinate in the male, and serrate in the female: *Body* cylindrical.

Ptilinus, Latr.

3. *Antennæ* simply filiform, much longer than the thorax: *Body* short and sub-ovate, or subglobose.

Gibbinm and *Ptinus*, Latr.

All the species belong clearly to one natural family, and form a good genus: they all likewise belong to the genus Ptinus of Linnæus and Marsham.

49. ELMIS. *Head* bending downwards: *Thorax* rather flat and margined: *Antennæ* fine, and rather short, the articulations close, and somewhat increasing towards the end: *Body* small and ovate: *Legs* long: *Tarsi* with five long joints; the one before the claw larger than the rest.

Limnius, Muller. Gyllenhal & Leach. *Elmis*, Latr.

50. **HISPA.** Supposed not to be British.

51. HETEROCERUS. *Head* terminating, uniting closely to the thorax and exerted:[*] *Antennæ* very short, recurved, and generally concealed:[†] *Body* ovate: *Tarsi* with four joints.

Hetorocerus, Fab. Latr. Marsh. Leach.

52. MORDELLA. *Head* sub-triangular, much deflected and exerted, bending under and coming close to, or flat against the thorax, to which it is united by a slender inserted neck: *Thorax* generally much sloping anteriorly: *Antennæ* filiform, gradually enlarging towards the end, sometimes serrate: *Elytra* narrow, the anterior part of the external margin overlapping the abdomen: *Body* elevated, arched, deep and compressed at the sides, especially in the larger species, but more depressed and oblong-linear in the smaller ones: *Legs*, the hinder pair long, arched and very near at the base of the femora.

Mordella and *Anaspis*, Latr. *Mordella*, Marsh.

NOTE. This genus occurs in Heteromera, but the four anterior legs do not appear to me to have five joints in the tarsi.

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[*] NOTE. By terminating, I mean continuing in a line with the thorax, so as to carry on, and end the upper surface.

[†] The Antennæ are said to be serrated, but the serratures cannot generally be seen without careful examination, and a very good glass.

53. **BUPRESTIS.** *Head* sub-exerted, nearly or quite as wide as the thorax, and terminating: *Eyes* large, oval, and even with the head: *Thorax* transverse, nearly flat, the posterior margin either receding from the scutel, or nearly straight: *Scutel* small, but distinct: *Antennæ* serrate, generally short: *Elytra* linear, rigid, tapering towards the end, blunt or truncate, and frequently waved at the exterior margin: *Body* oblong or oblong-linear, depressed, and often compressed laterally: *Legs* thin. Divided.

1. *Body* oblong and flat: *Thorax* with the posterior margin nearly straight.

Buprestis rustica, of Marsham.

2. *Body* oblong-linear, compressed at the sides: *Thorax* with the posterior margin in three curves, the middle one receding from the scutel.

Buprestis of Authors.

54. **TRACHYS.** *Head* sub-exerted, terminating, and in consequence of the projection of the eyes, appearing as though it were notched in the middle: *Thorax* transverse; the posterior margin distinctly bending towards the place of the scutel: *Scutel* very minute or none: *Antennæ* thin, very short and serrate: *Elytra* rather broad at the base, acute, or rounded at the end, and

sub-depressed: *Body* short, ovate, and slightly convex or depressed: *Legs* short and contractile.

Buprestis, Marsham. Linn. Latr.

Trachys, Fab. Leach

55. NECYDALIS. *Head* exerted and terminating, the anterior and frontal part extended into a very short proboscis: *Antennæ* long, thin, the joints cylindrical: *Palpi* obvious: *Thorax* rough, unequal, sub-cylindrical: *Eyes* sub-exerted: *Elytra* subulate, mostly separating at the internal margin, and depressed: *Body* linear, convex on the under side, depressed above: *Legs* long, hinder thighs of the male thick in some species.

Necydalis, Marsham. *Œdemera*, Latr.

"56. MYCTERUS. *Antennæ* inserted before the eyes on the rostrum: *Rostrum* elongate, narrow: *Eyes* globose, prominent: *Elytra* hard: *Palpi* with the last joint compressed."

The above character is copied from Mr. Samouelle's Entomologist's Compendium. Page 198, I have not seen any species of the genus.

57. MALACHIUS. *Head* sub-exerted transverse and declining: *Thorax* flattish, rugose, somewhat square, or else wider anteriorly: *Antennæ* long, filiform, or somewhat tapering, joints sub-

obconical, or cylindrico-conical: *Elytra* linear, depressed and rigid: *Body* oblong-linear: *Legs* long.

Malachius, Latr. *Cantharis*, Marsham.

58. LYTTA. *Head* exerted, declining, very large, (nearly as large as the whole size of the thorax) and nearly triangular: *Thorax* small, widest anteriorly: *Antennæ* thick, equally filiform, the first joint large, the second very small; the remaining ones sub-obconical, except the last which is pointed: *Elytra* soft, flexible, oblong, and slightly convex: *Body* elongate, oblong, very convex in the breast beneath; the abdomen somewhat convex; above somewhat convex: *Legs* long.

Cantharis, Latr. Leach. *Lytta*, Marsham.
Meloe, Linn.

59. ANTHICUS. *Head* exerted, large, nearly square, declining, and united to the thorax by a slender neck: *Thorax* somewhat cordate and narrow: *Antennæ* slightly thicker towards the end, and sub-moniliform: *Body* small, ovate, and somewhat convex: *Legs* rather long.

Lytta, Marsham. *Anthicus*, Leach. *Notoxus*, Lat.

60. NOTOXUS. *Head* exerted and declining; mouth somewhat produced: *Thorax* drawn out

in the middle into a distinct horn: *Antennæ* equally filiform, the first and last joints rather the largest: *Body* small and nearly cylindrical. *Lytta,* Marsham. *Meloe,* Linn. *Notoxus,* Latr. and Leach.

61. ULODES. *Head* sub-exerted, terminating and somewhat declining in front: *Thorax* rather long, somewhat convex, with *two deep lateral impressions*: *Antennæ* about half as long as the body, equally filiform and thick; the first articulation slightly larger, and the second distinctly smaller than the rest; the intermediate articulations sub-triangular, the last pointed and slightly larger: *Elytra* linear and somewhat convex: *Body* linear, sub-cylindrical, but somewhat depressed.

The insect from which this description is taken, cannot be referred to any genus with which I am acquainted. I have called it Ulodes on account of its being found in woods, but this name can easily be altered if it has been described under any other. The last joint of the principal palpi is somewhat cylindrical and pointed. It may be specifically described thus, viz.

U. *pilosulus*. *Winged*: *Head* and *Thorax* black, with short thin golden hairs: *Elytra* black, with four yellow lateral spots, two on each elytron;

one communicating, oblong, yellow spot in the middle of these, and a waved, communicating band of the same colour towards the end of the elytra; external margin of the elytra deflected and yellow: *Legs* yellow: *Antennæ* deep yellow, or ferruginous: *Elytra* and *Body* covered with short fine hairs.

NOTE. This character may appear to bear some resemblance to that of Clerus mollis of Marsham; but it is quite a different insect.

62. TILLUS. *Antennæ* serrated: *Thorax* cylindrical, or nearly cylindrical: *Elytra* soft and flexible: *Body* linear and cylindrical: *Head* large, exerted and terminating.

Tillus and *Dasytes*, Fab. Latr. Leach.
Tillus, Marsham.

63. ZYLETA. *Head* declining: *Superior Palpi* of three large joints: the first triangular, and the last long and nearly cylindrical: *Antennæ* equally filiform, not half as long as the body: *Thorax* rounded at the sides, somewhat gibbous before the head, and with four obsolete impressions, two in the middle and two at the posterior margin: *Feet* slender; *Body* elongated, linear, sub-cylindrical.

Zyleta, Paykul. *Elater,* Linn. *Melasis,* Lat. Leach.

64. CANTHARIS. *Antennæ* filiform, joints, generally elongate, nearly cylindrical: *Head* large, exerted, sub-declining, and nearly as broad as the thorax : *Thorax* above thin, mostly rounded at the edges, especially anteriorly and much resembling a scale with the edges turned up : *Elytra* linear, flexible, and depressed : *Abdomen* in soft folds.

1st Div. *Larger Palpi* with the two last joints clavate, club sub-triangular : *Antennæ* rather long.

Telophorus, Latr.

2. Last joint of the *Palpi* cylindrical : *Antennæ* mediocral the articulations shorter and broader than in the last division.

Malachius, and *Drilus,* Latr. Leach.

3. *Elytra* abbreviate.

Malthinus, Latr. Leach.

65. *Antennæ* filiform, rather short, articulations sub-moniliform : *Elytra* convex at the sides : *Body* sub-linear and short : resembles the Cantharis, except in the above particulars.

Cantharis, Marsh. *Malachius,* Latr. and Leach.

Probably this genus might stand better as a division of Cantharis, but the Antennæ are different. It is associated with Malachius in the new systems, but does not accord with most of their species in the genus.

66. LAMPYRIS. *Antennæ* filiform; very near at the base; joints compressed: *Thorax* terminating the upper surface, thin, the anterior edge rounded, or forming the segment of a circle: *Head, Eyes,* and *base of the Antennæ* under and entirely concealed by the thorax: *Eyes* large and occupying almost the whole space of the head: *Mouth* very small: *Abdomen* in soft folds: *Female* without elytra or wings: *Elytra* of the male linear, somewhat depressed, coriaceous, and not so soft as in Cantharis.

Lampyris, Latr. Marsham, &c.

NOTE. Lampyris pusilla of Mr. Marsham, called *Lychus* by Dr. Leach, may probably be distinct from this genus, but I have not seen the insect.

67. LYCUS. *Antennæ* serrate: *Mouth* produced into a rostriform elongation: *Thorax* somewhat quadrate, the anterior margin transverse. *Cantharis* of Marsham.

I suppose this genus much resembles Cantharis, *but have not seen a specimen, and have been obliged to borrow the character from other books.*

68. PYROCHROA. *Head* exerted and declining: *Antennæ* pectinato-serrate, rather long: *Thorax* plano-orbicular: *Elytra* linear, somewhat broad and scarcely flexible: *Body* posteriorly wider and somewhat thick.

69. BLAPS. *Apterous, with the suture of the Elytra united*: *Antennæ* with the two first articulations very small, the third very long, the four or five next obconical, and the three or four last more or less approaching to a somewhat rounded form: *Body* large and heavy: *Legs* long, gait awkward.

Blaps, Fabr. Latr. Marsh. *Tenebrio*, Linn.

70. HELOPS. *Antennæ* with the second articulation very short, the third longer than the rest, the remaining ones obconical, except the last which is pointed: *Elytra* not united: *Body* oblong and convex: *Legs* moderate, runs with facility.

Helops, Latr. Leach. *Blaps*, Marsh.

71. PHALERIA. *Antennæ* filiform, gradually thicker towards the end; the four or five last joints close rounded, and frequently perfoliate.

or sub-perfoliate; the ultimate joint round or subglobose: *Thorax* transverse, quadrate, and convex: *Body* ovate or elongate, and ovate and convex.

Phaleria, Latr. Leach. *Tenebrio,* Marsh.

NOTE. The fem. of Ph. cornuta, taken by me at Swansea, has the five or six first joints of the Antennæ obconico-cylindrical, and the remaining joints gradually broader and more rounded towards the end; but not at all resembling the Antennæ of Ph. cadaverina and I presume of the other species of this genus: notwithstanding this deviation, the Antennæ appear to furnish the best character, as the mouth and its appendages are too minute and obscure, and it does not appear to supply other very characteristic distinctions.

72. ELATER. *Antennæ* filiform, and often serrate in the male: posterior part of the middle of the under side of the thorax ending in *a spine,* which fits into a groove in the anterior part of the breast; by means of this spine the insect leaps to a considerable distance when thrown on its back: *Body* linear, or sub-linear.

Elater and *Cerophytum,* Latr.
Elater, Linn. and Marsh.

NOTE. *This genus has nearly escaped the modulating powers of Entomological systematists. I once thought that El. Mesomelus and the species allied to it might be separated, and form a new genus, but I really think it is vastly more desirable to retain it as it is, than to institute the immense confusion of a multitude of intricate and undistinguishable genera.* Characters plain and simple are the only ones which lead with facility, and in a direct manner to a knowledge of the thing designed; and this after all is the grand end of classification in Natural History.

73. CARABUS. *Upper Jaws* generally with not more than one tooth, which is often bifid on one side, and is towards the base of the jaws, sometimes without any, having only obscure crenulations at the base; in a very few instances with two teeth:* *Palpi* six: *Legs* slender and

---

* I have described about 125 British species of this genus in a Latin MSS which are arranged into several different genera, with characters much the same as those given in Samouelle's late publication; my MSS. however was written long before that was published. The 125 species mentioned, are in my own collection; about 30 species described by Mr. Marsham, are not included, as I have never yet found them, and probably several more might yet be added. I have said that I have disposed them in several genera, and with cha-

adapted for running: *Hinder Thighs with an appendage at the base: Body* generally oblongo-ovate.*

F. *Antennæ Setaceous.*

74. CICINDELA. *Upper Jaws* large, prominent, and distinctly *many toothed: Palpi* six: *Legs* slim, and adapted for very quick running; hinder thighs with an appendage at the base, but not so distinct as in Carabus: *Eyes* large and much exerted: *Body* somewhat ovate, and wider in the posterior part.

Cicindela of all Authors.

75. CERAMBYX. *Base of the Antennæ* embracing the margin of the eyes: *Head* terminating or ending the upper surface of the body;

---

racters very similar to those which have since been made public, nevertheless as the character of the tribe is very distinct upon mature consideration, I think science is a gainer, by retaining the characters of the new genera only as the characters of divisions; and by considering the whole tribe to be, as they are in the Linnæan system, *one genus.* A genus is a family. My arrangement has omitted Trechus, Sphodrus, and several others of Dr. Leach's genera. In my opinion, the characters of the genera, or rather sub-genera in this tribe are the best in Mr Samouelle's book.

* One instance of a Carabus with two teeth occurs in our species, it is C. rostratus, where they are at the point of the upper jaws. Probably the genus contains others similar to it.

slightly declining from, or in a line with, and, generally, narrower than the anterior part of the thorax : *Palpi* four, frequently short and obscure : *Joints* of the tarsus four : *Body* elongate and somewhat oblong: *Legs* adapted for walking. All the species are winged.

Lamia, Clytus, Callidium, Saperda, and *Cerambyx* of System makers.

76. MOLORCHUS. *Antennæ* longer than the body : *Elytra* very much abbreviated, about one-third as long as the abdomen : *Head* terminal, and together with the thorax nearly cylindrical : *Body* long and thin : *Legs* rather long : *Wings* long and not folded.

Necydalis, Linn. *Cerambyx,* Marsh.
Molorchus, Fab. and Leach.

77. LEPTURA. *Antennæ* inserted between or before, but at some distance from the eyes : *Head* exerted, often expanding wider at the eyes than the anterior part of the thorax : *Thorax* with the anterior part mostly attenuated : *Palpi* short, and sometimes obscure : *Joints of the Tarsus* four ; Elytra frequently sub-angulate, or rising into a ridge at the base, and attenuate at the apex : *Body* elongate, and sub-oblong : *Legs* rather long and adapted for walking. Winged.

Leptura, Linn. Latr. Marsh. &c.

78. DONACIA. *Head* terminating, nearly in a line with, and not wider than the anterior part of the thorax: *Thorax* sub-square in the upper surface, sub-cylindrical in the whole form, widest in the anterior part: *Body* rather short, oblongo-ovate: *Elytra* and *Thorax* glittering and lacunous in all, or nearly all, the species: *Joints of the Tarsus* four,

Leptura of Linnæus, Marsham, &c.
Donacia, Latreille, &c.

NOTE. This appears to be quite a natural family: all the species are found on aquatic plants, such as Caltha Palustris, reeds, rushes, &c.

79. DYTISCUS. *Body* ovate, carinate beneath: middle of the under side of the *Thorax* ending in a spine: *Sternum* sulcate in the middle, or bifid: *Hinder Feet* ciliate, and adapted for swimming. Winged.

Dytiscus, Noterus, Colymbetes, Pœlobius, Hyphydrus, Haliplus, of Latreille.

NOTE. This genus has been lately, but very incorrectly called Dyticus.

80. FORFICULA. *Tail* forcipated: *Elytra* abbreviate: *Body* elongated and flexible: *Wings* large, semicircular, with radiated fibres, adapted

to longitudinal folds; the *anterior part* of the upper edge strong and sub-coriaceous from which the radii proceed: *Folds* several and diverse.

However extraordinary it may appear, so it is, that *Lamarck, Latreille, Dr. Leach,* and other eminent Entomologists have agreed, in considering this single genus as an order. If the consistence of the elytra, or the longitudinal suture be the character, it does not appear in either of these respects peculiarly to merit such distinction. The suture is straight, and if a section of the elytra be placed under a good glass, together with some of Molorchus, of the small Staphylini, Cantharis, and many other others, I am of opinion it will be found that there is no distinction in the consistence. The forceps at the tail however, and the growth of the insect from the egg to the imago without ever being in a dormant pupa, is different to what occurs in other Coleopterous species; but these circumstances *are not* those upon which the distinction of the Orders is founded. Linnæus had undoubtedly considered these circumstances, AND HE PLACED IT AT THE END OF HIS ORDER COLEOPTERA.

ILLUSTRATIONS

OF

THE HABITS AND ECONOMY

OF

Insects,

BELONGING TO THE

ORDER COLEOPTERA,

Taken from British Species.

Each Subject accompanied with a Poem by the Author.

> " But who can paint like Nature?"
>
> THOMPSON.

> "O Nature, how in every charm supreme!
> Whose votaries feast on raptures ever new;
> O for the voice and fire of seraphim
> To sing thy glories with devotion due!"
>
> BEATTIE'S *Minstrel.* Verse 40.

> "O! attend,
> Whoe'er thou art whom these delights can touch,
> Whose candid bosom the refining love
> Of Nature warms; O! listen to my song,
> And I will guide thee to her favourite walks,
> And teach thy solitude her voice to hear,
> And point her loveliest features to thy view."
>
> AKENSIDE'S *Pleasures of Imagination.*

Introductory Poem.

"Insects are in truth *a book* in which whoever reads, under proper impressions, cannot avoid looking from the effect to the cause."

Kirby & Spence. Vol. 1. p. 20.

Insect Nature is *a book*,
Wonders rise at every page,
In whatever part we look,
'Twill our thoughts our hearts engage.

'Tis a book unsully'd, bright,
Written by th' unerring hand
That dispenses life and light,
And that clothes the vary'd land.

Oh! Attention, wouldst thou bend,
From thy mental seat awhile,
And to me thy powers lend,
Whilst I read its glowing style:

I would try to charm thy ear,
And to lead and fix thy mind,
By the tales so sweet and clear,
I within the book shall find.

Genii[*] of the woods and fields,
Roving spirits of the air,
Lead me to the FOUNT that yields
All that's beautiful and fair.

[*] "Sent by some *Spirits* to mortals good,
Or the unseen *Genius* of the wood."
MILTON'S *Il. Penseroso.*

"For my own part I am apt to join in opinion with those who believe that all the regions of nature swarm with spirits; and I am wonderfully pleased that I am engaged with such an innumerable society, in searching out the wonders of the creation."

ADDISON *in the Spectator, No.* 12.

The same sentiment is again expressed by Milton.—

"Nor think though men were none,
That heav'n would want spectators, God want praise:
Millions of spiritual creatures walk the earth
Unseen, both when we wake and when we sleep;
All these with ceaseless praise his works behold
Both day and night.—How often from the steep
Of echoing hill or thicket have we heard
Celestial voices to the midnight air,
Sole, or responsive each to other's note,
Singing their great Creator? Oft in bands,
While they keep watch, or nightly rounding walk,
With heavenly touch of instrumental sounds,
In full harmonic number join'd, their songs
Divide the night, and lift our thoughts to heav'n."

MILTON'S *Paradise Lost.*

Teach my pen to trace in song
Through the wisdom-working ways,
That to Nature's power belong,
And resound her living praise.

And ye tiny forms that dwell
Various o'er the fertile earth,
Come dissolve the magic spell,
That surrounds your mystic birth.

Ye that shine and richly glow,*
Ye that fragrant incense breathe†
Come, and of your gifts bestow
Tints to deck your poet's wreath.

---

* Scarabœus auratus. (Cetonia aurata) mutator, and nobilis; many of the Carabi, particularly monilis, inquisitor, sycophantus, sex-punctatus, cyanocephalus, and many others; all the Cicindeli; Elater æneus. cyaneus, pectinicornis. &c. Curculio Bacchus, nitens, almost all the Chrysomelæ, and *a multitude of others.*

† Cerambyx moschatus emits the scent of musk, (or a pleasanter than that,) so strongly, that if put into an handkerchief whilst alive, for a short time, the scent will remain for several days afterwards: many other insects diffuse a very fine odour.

Ye that delve and ye that spin,*
  Ye that fairy fabrics raise,†
Ye that moral trophies win,‡
  Twine around his wreath your bays.

But O intellectual power!
  Chief of *Thee*, thy boon I ask,
Aid me in the falt'ring hour,
  Guide me in my lonely task.

Give my simple artless lay
  Grace to charm the rising youth,
Strength to lead to Nature's sway,
  Power to teach her holy truth.

---

[*] Scarabœus stercorarius, mutator, and other species, dig a hole for the nidus for their young several inches deep: Silpha vespillo buries dead bodies for its larvæ to feed upon: many other insects dig for the same purpose. Moths and Butterflies spin.

[†] The habitations of the larvæ of many flies, moths, and particularly of the Neuropterous genus Phryganea, from their very curious construction, may well deserve to be called "Fairy Fabrics."

[‡] Ants, Bees, Spiders, and in fact, almost all insects for their attachment to their young, and many for their social fellowship, deserve to be considered as meriting moral trophies.

Fancy too, where truth is nigh,
 Spread thy airy, dappled wing,
She shall guard me whilst I fly,
 She shall guide me whilst I sing.

Var.

Insect Nature is a book,
 Giving like a mirror true,
Or the landscape-painting brook,
 Truth's own image to the view.

This is as it was first intended to be, and the verse is now inserted because it has already appeared so in different places.

Should the reader be disposed to consider this language too presumptive, let him recollect that it is a prayer, and not a promise; we may, and often do, pray for things which subsequently it is not in our power fully to have, or entirely to accomplish; and the author is willing to hope, that something farther is left to be done than the present volume contains.

SCARABÆUS mutator.

The Dor, or Evening Clock.

Ess. Gen. Ch. Antennæ clavate, the *club* consisting of leaves or plates, which are generally closed, and form a distinct, abrupt, and rather thick knob; the plates being capable of longitudinal separation: *Fore feet* with the tibia generally spined.

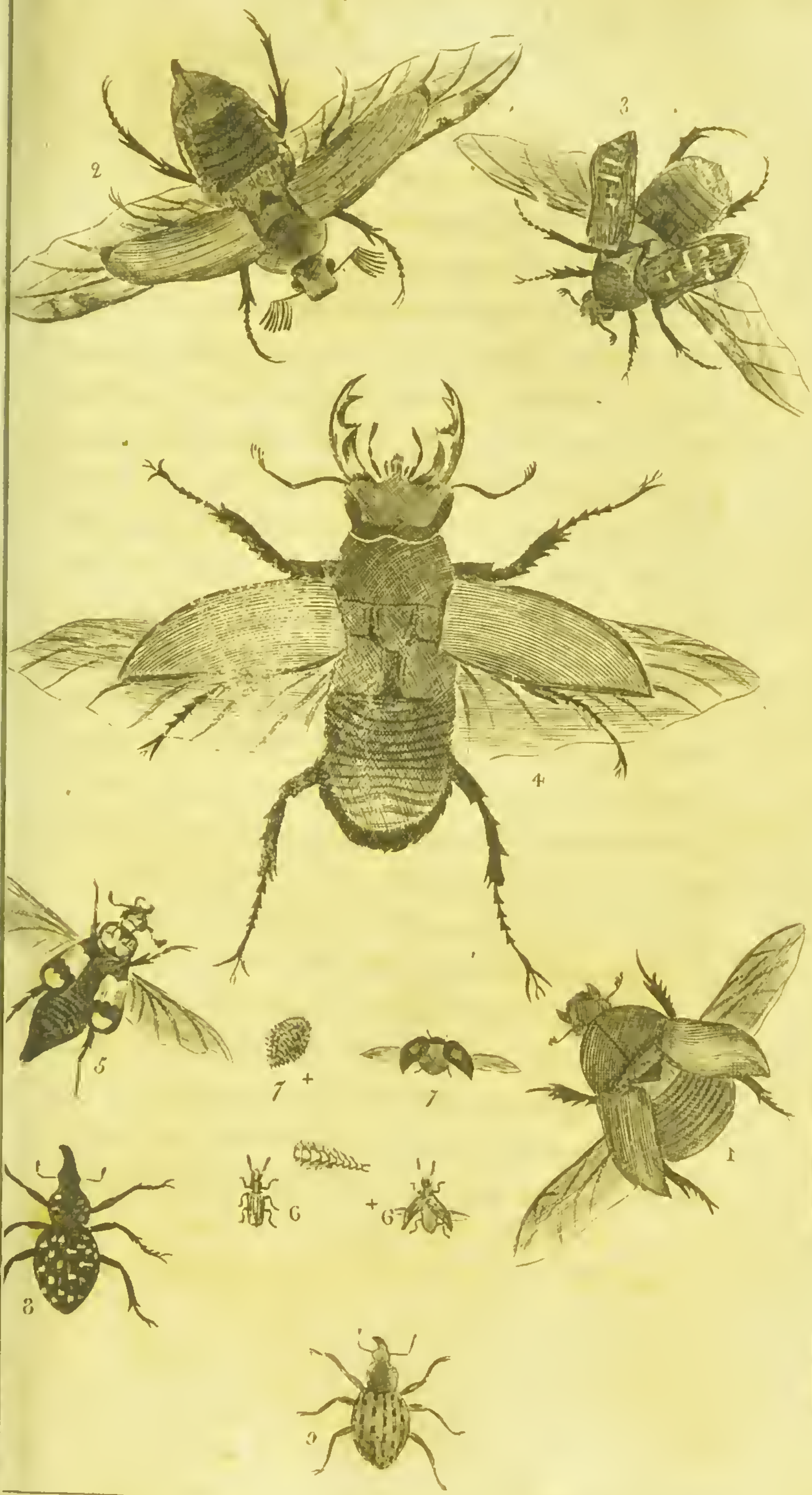
Specific Character. Winged: above dark violet, beneath fine green or blue: *Thorax* smooth, finely punctured at the sides, and with one or two large impressed punctures on each side: *Elytra* rather soft than rigid, and sulcate; the grooves deep at the base, and irregularly punctured in the whole length: *Body* thick, obtusely oval, smooth and very convex above; convex beneath: *Legs* strong, arched, and spined.

Length one inch.

Habitat and Economy. This species belongs to the *Terrestrial Division* of the genus, and in common with the greater number in that division, it is bred in and feeds upon animal stercor.

In conjunction with the numerous tribe of its congeners, and other insects of the same habitat, it is very serviceable to the farmer and proprietor of land and contributes to the pleasure of those

Plate 2



ooker [illegible]

who delight in the scenery of nature. For without the agency of this host of little, but active beings, the stercor of animals would remain for a long time as unseemly and offensive blots; preventing the growth of vegetation, and aggregately occupying a considerable part of the surface of our fields; by their means it is converted to a benefit, and contributes to fertilize the earth. Their numerous perforations form so many canals for the admission of the wet, and therefore give facility to its operation in the dispersion of the stercor. The female of the present species also, and of others, buries some of the stercor three or four inches deep in the earth, as a nidus for her young; thus at the same time both hiding some of the offensive matter, and opening a passage for its nutritious juices to the very roots of the surrounding vegetation. But it is the voracity of their numerous offspring that contributes most speedily and effectually to clear our fields of these unpleasant but unavoidable blots; for they quickly devour the pulp, and leave nothing but the dry and perforated shell, which is soon scattered by the winds.

When the female has deposited her eggs, and covered them with stercor, she has performed her part, and quits for ever her future progeny. The larvæ which proceed from the eggs are grubs with a soft, fleshy, incurved body, soft, fleshy legs, and a hard horny head and jaws. Their continuance in this state does not appear to be very long. The pupa buries itself in the earth, has but seldom been found, and is but little known. The beetles, or perfect insects fly about during the evening, from the beginning of spring to the end of autumn; but are most abundant in the spring. In the winter when their services in the field are less necessary, they, and most others of a similar nature, are preserved in the perfect state in close concealments, sometimes in the earth, and sometimes in other situations. These winter dwellings are called their *hybernacula*, and in them they remain dormant. *See Kirby & Spence, Vol.* 1. 254. and again 394.

SCARABÆUS mutator.

"Auteur de l'Univers, que tes desseins sont sages!
Tout est pur et parfait dans tes moindres ouvrages."

Author of all, how bright thy glories shine!
How pure, how perfect, is thy least design!

Professeur Jolyclerc.

" Now air is hush'd, save where the weak-ey'd bat
With short, shrill, shriek, flits by on leathern wing:
Or where the Beetle winds
His small *and blitheful*[*] horn."

Collins.

In the cool of the eve when the ardour of day,
As its vigour is spent has subsided away,
When the birds of the air are all gone to their rest,
Save a few that the twilight invites from their nest;
When the life of the day is all hush'd in the air, 5
And when silence proclaims there is little to fear,
Then on pinions, made light by the object in view,
The field Dor and his mate their fond dalliance pursue;
In their blind, rapid flight their rude notes on the gale
Widely warbling afar spread their amorous tale: 10
Thus they cheer the still eve as they carol their lay,
Sweetly soothing tir'd toil with the requiem of day;

---

[*] *but sullen*—words which in the quotation I have taken the liberty of altering.

Whilst the moralist feels as their strains wildly float,
The day's register, death-bell and song in the note.
As the beauties of flow'rs oft lie hid in their bells,
Or as pearls are conceal'd in their rough-coated shells,
So in black or dun-brown in the fields they appear
To the view that ne'er seeks for the riches they wear;
Where the [*]sapphire or em'rald with tints glowing bright
From the amethyst's gem in sweet concord unite.

[*] I have carefully and repeatedly examined the insects of this species in my own collection, and I think this description is not beyond the truth. On a careless view, the elytra appear of a brownish black, but when more attentively observed, are found to have a rich amethystine tinge: but it is the abdomen beneath, which would not be likely to be seen in the fields that possesses the finest colour, being often of a bright blue or splendid green. "*Elytra amethystina cum tinctura rubini.*" "*Corpus subtus viride, pedibus violaceis.*"

Marsham's Entomologia. p. 22.

Such bright charms (by indiff'rence beheld in the shade)
Are by science to notice full often display'd:
So the glories that shine in the cloud-shifting scene,*
Or luxuriantly deck Nature's mantle of green
Are unheeded, unfelt by the thrift-heeding swain,
As he trudges on careless of all but dull gain;
Whilst the mind's finest feelings responsively true
In the soul of discernment art rapt with the view.
But 'tis now the fond duty by Nature design'd,
To consign to futurity some of each kind,
That directs the Dor-mother to form a fit bed
For her young where the herd have left marks of their tread;
Here she mines, and with nurture commits to the earth
Her dear charge, which the warmth will soon call into birth;

---

* "Where midst the changeful scenery ever new,
Fancy a thousand wondrous forms descries,
More wildly great than ever pencil drew,
Rocks, torrents, gulfs, and shapes of giant size;
And glittering cliffs on cliffs, and fiery ramparts rise."

BEATTIE'S *Minstrel.*

Here her offspring are born in and fed by the *shard*,* 35
As was hinted long since by our DRAMA'S GREAT BARD.
So the task of maternity, lightly impos'd,
Ere the eggs break their shell to the parent has clos'd.
As the bubble that rises to burst in the air,
Is the web of our reason, our toil, and our care; 40
'Tis the fate that to folly and weakness pertain,
Both to plan, and to strive, and but little to gain:
But in Nature where wisdom complete in her plan,
Rules all things, and has rul'd since the world first began,
Not an atom of being, a point, can be found, 45
But whose tale with instruction to us will abound.

---

* "Ere to black Hecate's summons
The *shard-born Beetle* with his drowsy hum
Hath rung night's yawning peal."
SHAKESPEARE'S *Macbeth.*

"The Sharded Beetle."
SHAKESPEARE'S *Cymbelline,*

Let the feelings of him who his life can enjoy,
And who learns thence to save, but can never
destroy;*
And of him who delights in humanity's call,
And like †REYNOLDS pours balm o'er the suff'-
rings of all; 50

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* Some of those who may happen to see an Entomologist collecting insects in the fields, or may witness the subsequent arrangement of them in his cabinet, may perhaps be disposed to accuse him of cruelty. But were I to judge, as an Entomological collector of considerable experience, I should say that any intentional cruelty is the farthest possible from his thoughts. It is true indeed, that many lives are sacrificed, but then it is only with the wish, the humble wish, that he may become instrumental in promoting among his fellow-creatures a knowledge of the interesting and august works of the Eternal. It is only as a means, an unavoidable means, towards a great and sufficient end. Such at least have been and are my own sentiments upon this subject. The means appear to be apologized and sanctified by the end. This therefore is *not destruction.* Young people ought not indiscriminately to be encouraged in the habit of collecting.

† The late Richard Reynolds, Esq. of Bristol, whose extensive benefactions and gentle philanthrophy, have left an impression more honourable than the fame of the hero, and over which the waves of oblivion cannot pass, till those who have felt, and those who have commemorated them, are alike overwhelmed in the tide,—in the immensity of ages.

Of whoever has felt o'er his heart the sweet glow
Of the pleasure which thoughts form'd to kindness bestow,
Be the guide, and his conscience will tell him 'tis true
That the spark which thus glimmers in him or in you,
With the blaze of full day must effulgently shine,
In the Source of all Good, *the Great Author Divine,*
To give life and its pleasures is blessing and blest,
And is reason sufficient it must be confest,
Why the song of new life should from myriads resound,
And the Dor join his note could no other be found.
But to him and his tribe where the herd tie the green,
In rude blots, the wild marks of their footsteps obscene,
Is the task to dissolve them, convert them to gain,
To bid beauty revive and resume her soft reign.
And the storms and the dews in their aid are combin'd,
And the fragments in tatters swept off by the wind,

Thus enjoying their life they enliven the day,
And to man and the earth the sweet boon they
repay;
Whilst their habits, their hist'ry to us have
display'd
The same wisdom in which stars and worlds are
array'd. 70

SCARABÆUS melolontha.

The TREE BEETLE, or COCK CHAFFER.

Ess. Gen. Ch. *Antennæ* clavate, the club consisting of leaves or plates, which are generally closed, and form a distinct, abrupt, and rather thick *knob;* the plates being capable of longitudinal separation: *Fore feet* with the tibia generally spined.

Specific Character. *Winged: Elytra* brown, semi-transparent when open, frequently, especially in the female, covered with very minute white hairs, which give them the appearance of being powdered: *incisures of the Abdomen* marked with a triangular white, marginal spot: *Breast* hairy: *Head, Thorax,* and *Scutel* black; the former with minute brown hairs: *Legs* rather long, and thin, with sharp claws, adapted for clinging: *fore tibia* broader than the rest and spined, formed for digging.

Length one inch and two lines.

HABITAT AND ECONOMY. This species belongs to the second, or Arboreal division of the genus. The larvæ live four or five years in the earth upon the roots of grass, corn, and vegetables, and like most other insects in this state of their existence, are exceedingly voracious. The beetle has a much shorter date, and continues for no more than about six weeks, or perhaps two months, flying about in the evenings of May and June. It feeds upon the leaves of many, probably of most, kinds of trees. In ordinary seasons the larvæ eat no more than serves to promote the growth of the roots they feed upon. Sometimes the larvæ and their beetles are exceedingly numerous and destructive, so much so, as to justify the account given of them in the following verse; for a full confirmation of which, see the *Introduction to Entomology, by Kirby and Spence*, vol. 1, p. 180, 208, & 282. The Arboreal division of the genus Scarabeus, contains eight or nine British species, which are very similar in their economy and mode of living.

SCARABÆUS melolontha.

"Now wisdom with superior sway
 Guides the vast moving frame,
Whilst all the ranks of being pay
 Deep reverence to his name."

WATT'S *Horæ Lyricæ.*

——————"a feeble race! yet oft
The sacred sons of vengeance, on whose course
Corrosive famine waits and kills the year."

THOMSON'S *Spring.*

1.

Mother, nurse of all on earth,
On her breast fond Nature feeds,
All, and from the hour of birth,
Through their course their wand'rings leads.

2.

Are there of her children those
That for all her fost'ring care,
Sometimes prove this mother's foes,
Nor her wealth nor beauty spare;

3.

But with ruin wild and wide,
Desolate her fertile fields,
Like a torrent, or the tide
Which the boundless ocean yields.

4.

Think not 'tis as chance directs,
No! o'er Nature's weal presides
One who all her course inspects,
And with potent pow'r guides.

5.

His the whirlwind, his the storm,
His the planets as they roll,
His too ev'ry beauteous form
That can charm, or deck the whole.

6.

Even little insect clans,
  Can his purposes fulfil,
Or t'adorn, or strip the lands,
  As may be his sacred will.

7.

Thus the Melolontha race,
  Constant in the month of May,
Often yields but marks to trace
  Where they've quickly pass'd away.

8.

Whilst the secret mining band
  Of their little larvæ speed,
So that Natures guiding hand,
  Makes them aid the flow'ry mead:

9.

For with active insect toil,
  They where roots entwining spread,
Harrow through the grass-bound soil,
  Eat,—and call forth more instead.

10.

Does he bid,—their numbers rise,
  Countless as the stars of night,
Veiling all beneath the skies,
  In their far-resounding flight.

11.

Then the bright luxuriant green
Fades before the sick'ning eye,
Summer's robe no more is seen,
Though her suns their aid supply.

12.

Kindly dews and showers bland,
Gentle zephyrs—are in vain;
Man in vain may till the land,
Vainly strew the cultured plain.

13.

Dry and wither'd all around,
Fading into swift decay,
Grass and plants that clothe the ground
Are eaten at the roots away.

14.

Famine's gaunt and wither'd form
O'er the threat'ning prospect bends,
He alone allays the storm,
Who the host of havoc sends.

15.

So where aged Iser reigns
Husband of the beauteous spring,
Savage swarms from Scythia's plains,
Borne on rapine's raven wing,

16.

Erst their desolation spread
Furious,—with remorseless sway,
Till the scene all drear and dread,
Fell, the ruthless victim's prey.*

---

* The Goths had at this time established themselves from the Baltic to the Euxine.

Gibbon's Decline and Fall, Vol. 4, p. 370, of a new Edition.

" But the attention of the Emperor was seriously engaged by the important intelligence which he received from the civil and military officers entrusted with the defence of the Danube. He was informed that the North was agitated by a furious tempest; that the irruption of the Huns, an unknown and monstrous race of savages, had subverted the power of the Goths; and that the suppliant multitudes of that warlike nation whose pride was now humbled with the dust, covered a space of many miles along the banks of the river. With outstretched arms, and pathetic lamentations they loudly deplored their past misfortunes and their present danger, acknowledged, that the only hope of safety was in the clemency of the Roman government, and most solemnly protested, that if the gracious liberality of the Emperor would permit them to cultivate the waste lands of Thrace, they should ever hold themselves bound, by the strongest obligations of duty and gratitude, to obey the laws, and to guard the limits of the republic." Ib. 376. This suppliant multitude, to the number of a million individuals, (379) were permitted to cross the Danube and to enter the Roman dominions.

17.

So too oft in times of yore,*
Cherish'd fields and plains have been
By the sword ambition bore
Stript of all their mantling green.

18.

Thus can he whose potent will
Arm'd the flies of Pharoah's days,
Give them to his vengeance still,
Or to wreathe in peace his praise.

19.

Thus the booming flies of May,
Though by Nature freely fed,
Have a circumscribed way
And by Wisdom's hand are led.

20.

And can good or evil give
To the verdant fields and plains,
As he bids or not to live,
Who the life to all ordains.

---

* The progress of civilization and the influence of christianity have no doubt, softened the ferocity of the angry passions, and mitigated the horrors of war. The Goths of the fifth century, rude converts to the Arian christianity, not contented with desolating the provinces they overrun, deprived their captive peasants of the right hand which guided the plough.
Ib. Vol. 7, p. 7.

21.

So to Reason's sober eye,
  Would she but their truths explore,
Nature's pages oft supply
  Lessons of the deepest lore.

SCARABÆUS auratus.

The Golden or Rose Chaffer.

Ess. Gen. Ch. *Antennæ* clavate, the *club* consisting of leaves or plates, which are generally closed and form a distinct, abrupt, and rather thick knob; the plates being capable of longitudinal separation: *Fore Feet* with the tibia generally spined.

Specific Character. *Winged:* polished green, frequently with a golden gloss: *Elytra* marked with white scratches: *first segment of the Abdomen* with a *strong green tooth* on each side: *Body* broad and depressed: *Legs* thin and adapted for clinging.

Length nine or ten lines.

Habitat and Economy. This splendid species belongs to the *Floral Division* of the genus. The *Larvæ* live, it is said, on decaying matter. The beetles are common on the rose tree, meadow-sweet, and umbelliferous blossoms, in June,

SCARABÆUS auratus.

> "Les plaisirs de la vie nous seduisent par de belles apparences, sans avoir aucune realite."
>
> L' Histoire de Guzman par Le Sage. Tom I. 69.

"But pleasures are like poppies spread,
You seize the flow'r, its bloom is shed;
Or like the snow-falls in the river,
A moment white, then melts for ever;
Or like the borealis race
That flits, e'er you can paint the place;
Or like the rainbow's lovely form,
Evan'shing amid the storm."

Tam O' Shanter. Burns. Vol. 2, p. 7.

1.

Like him that reposes on lux'ry's soft bed,
In chambers of ease with rich fragrance o'er-spread,
Whose hours by the fingers of pleasure are led,
And whose day is all lost in delight.
So we, where the blossoms their beauties disclose,
Recline on the bloom of the sweet-scented rose,
Or on the soft lap of the *mead's queen repose,
And revel all day in delight.

2.

Thus spring for us spreads the most choice of her sheen,
Whilst Nature as partial, as bounteous is seen,
Who cloth'd us with splendour in gold and in green,
And form'd us to please and delight;

---

* Spiræa Ulmaria Regina Prati—Meadow sweet, or Queen of the Meadows.

But Wisdom, who holds over Nature her sway,
Gives us only a moment, a short summer ray,
We gleam like a meteor in dazzle and play,
And sink in the shades of the night.

3.

Not thy pleasures alone, but their fate here below
Do they picture, for ah! though so brightly may glow
Gifts that fortune, or fashion, or fame can bestow,
On the couches of ease and delight;
Yet Time's with'ring arm will soon sweep them away,
Nor can rank, learning, genius, command them to stay,
They gleam for a moment, then sink in decay,
And are lost in the shades of the night.

4.

Thy wishes then let them not vainly allure,
But hasten from life's teeming soil to secure
Those products whose worth, bloom and fragrance endure,
They spring from the SOURCE OF DELIGHT:
For Wisdom's the source of all rational joy
Whose blossoms no blight-worm can ever annoy,
Whose fruits even time has no arm to destroy,
They fade not in Winter's cold night.

LUCANUS.

The STAG BEETLE.

Gen. Ch. *Antennæ* elbowed in the middle; at the end clavate; the club divided into three or four flat plates, on one side only of each Antennæ, and resembling a comb: *Jaws* exerted and toothed: *Legs* with the tibia spined, nearly straight, and adapted to a slow walk.

All the British species are winged.

HABITAT AND ECONOMY. The Larvæ of this genus live in old ash, elm, and oak, devouring them as they become decayed. I have mostly found them in ash, sometimes in oak, but rarely in elm, which is more subject to other insects. I do not believe that they inhabit sound trees, or that much, if any harm, would ever be done by them in this country, if trees were cut down and carried away when they become mature. They are generally to be found in quite rotten wood. They come out in June and July. There are four British species, of which L. cervus, the Stag Beetle is the largest, and one of the most interesting of our Coleoptera; it is frequent in the New Forest, and in large old woods; but it is also found in the wood of oak, in meadows and parks. Its large and beautiful superior maxillæ are certainly not adapted for carnivorous prey, and the formation of its mouth in general, indicates that the imago feeds only upon soft substances. The resinous sap which oozes from trees, is said to be its food. L. parallelipipedus is common every where in dead ash, &c. I believe the imago eats fruit, but it wants confirmation.

LUCANUS. The STAG BEETLE.

> "Let no presuming impious railer tax
> CREATIVE WISDOM, as if aught was form'd
> In vain, or not for admirable ends."
>
> THOMSON'S *Summer.* V. 315.

1.

In the forest's deepest shade,
Far beyond the moss-clad cell,
Erst for holy hermits made,
E'en within the wood we dwell.

2.

But when Leo's radiant rage,
Animates the king of day,
O'er the earth's diffusive stage,
'Twill his living power display.

3.

As it penetrates the deep,
Then we feel its genial glow,
Wrapt awhile in vernal sleep,
'Twill the powers of flight bestow.

4.

Short to us is Summer's date,
Then on love-borne wings we stray,
Through the woods to find a mate,
In the ev'ning of the day.

5.

Lightly passes on the hour,
In the feast of nuptial joy,
E'er we sink, as fades the flow'r,
Which the rip'ning gales destroy.

6.

Soon another course is felt,
Kindling in the mother's care,
'Tis to seek where once she dwelt,
And to place her offspring there.

7.

Mellow'd by the hand of time,
Where the hard and sturdy oak,
Or the ash now past her prime,
Waits to feel the woodman's stroke:

8.

Thither where the proper food
Is for young ones of our kind,
She repairs to place her brood,
'Tis she knows the place assign'd.

9.

Jocund days of youthful sport,
Others revel o'er the green,
We no other pleasure court,
Than to live and grow unseen.

10.

Think not that our being's vain,
Or destructive to the wood,
Nature's plans some good must gain,
Were they rightly understood.

11.

Oft a sacred veil is spread
O'er the beauteous form of things,
Such as wraps the fate when dead
Both of beggars and of kings.

---

[*] See the Systema Naturæ of Linnæus,—and Kirby and Spence's Introd. Vol. 1, p. 260.

12.

Yet shall HE whose sounding horn*
Call'd us on the marshal'd plain,
Tell thee why our race were born,
And to thee our tale explain.

13.

Where vast forests shade the earth
And obscure the noon-tide ray,
Dire effects might owe their birth
To the trees when in decay.†

---

* "The Swedish sage admires in yonder bowers
His winged insects and his rosy flowers,
Calls from their woodland haunt the *sylvan* train,
With sounding horn, and counts them on the plain."

CAMPBELL's *Pleas. of Hope.* Part I.

† It is true the insect is here telling his own tale more fully than Linnæus told it. But the allusion to a Naturalist so EMINENT, one indeed, who as the founder of all just distribution in Natural History, deserves almost to be considered as the Father of Natural History itself, and to whose arrangement and labours we may generally ascribe our first knowledge of the objects of Natural History, does not appear to be improper. The ancients were certainly acquainted with the Lucani. The Author of this verse however derived his first knowledge of them through the medium of the Linnæan classification.

14.

Dead, a weight upon the land,
Little nurslings could not grow,
Nor their infant buds expand,
Or miasma thence would flow.

15.

Part on us the task is laid,
Partly too on many more,
That the weight be thence convey'd,
Nature's beauty to restore.

16.

Or in countries peopled well
Man in us a good may know,
We the skilful farmer tell
When to lay his timbers low.

17.

All on earth is born to die!
Wafted by the buoyant wind,
See the little seedling fly,
Which the closing earth shall bind.

18.

Soon its leafy stem shall rise,
And in all its vigour spread,
Shading from the ardent skies
Where the lowing cattle tread.

19.

Many a year its growth shall see
 Waving beauteous o'er the scene,
Insect joys innum'rous be
 Nurtur'd on its mellow green.

20.

Strong in beauty, ripe in bloom,
 Monarch of the silvan train!
Man! wouldst thou his strength assume?
 'Tis the time that prize to gain.

21.

Soon shall age in sober grey,
 All in beardy moss array'd,
And with wither'd limbs display
 That his strength must shortly fade.

22.

Now with broken front sublime,
 Ne'er protective shade to yield,
'Tis the voice,—the voice of time
 Sternly bids him quit the field.

23.

Ah! shall reason then repine
 (She was oft forewarn'd in vain,)
If the will of heav'n assign
 Other powers to clear the plain?

24.

If by many a chosen band
Active and combin'd in toil,
Led and train'd by nature's hand
She removes him from the soil.

25.

*Pioneers (Lucani) lead,
Other troops in turn appear,
Seasons aid,—till vict'ry's meed
Blooms to grace the joyous year.

---

* I am ignorant in what manner the female of the Lucani performs her oviposition. I suppose she must pierce the bark, though the larvæ do not afterwards continue in it, but penetrate into the internal part of the wood, and live upon it where it is going into decay, By piercing the bark, and as their attacks are among the first upon decaying trees, they may properly be considered the pioneers in that work of destruction, by which the dead and the withered give place to the living and to the beautiful; this succession of vegetation, is the consequence of their labours, and therefore the *meed of their victory.* It may be supposed that it would be a long time before the combined labours of insects could remove a dead tree; and in comparison of the speedy and effectual power of man, it certainly, and fortunately, would be so. But even in this country, where the instrumentality of such labourers is less beneficial and less required than in the rapidly vegetating climates of a warmer zone, I have seen instances where dead trees would ere long have been entirely dissipated by them and by the seasons, had not the owner wisely asserted his claim by their removal. Their province naturally leads them to do good—it is in the power of man to prevent their doing harm, by anticipating their labours.

SILPHA.

The CARRION BEETLE.

Ess. Gen. Cha. *Antennæ* clavate; the club either a perfoliate mass, or a more gradually perfoliate head: *Head* small and inflected: *Thorax* resembling a shield: *Body* broad, frequently depressed, or slightly convex, and generally with the abdomen rather longer than the elytra.

ECONOMY, &c. The Silphæ live both in the larva and perfect state upon carrion, in removing which they are very serviceable. The beetle entirely buries small dead bodies, such as birds, mice, and pieces of carrion, for its larvæ to feed upon. Without this precaution its young would be likely to be deprived of their food by the multitude of flies that would immediately surround and devour it, or perhaps by some voracious animal that might swallow it at a mouthful. Notwithstanding this extraordinary sagacity in the parent beetle, they do not have recourse to it where the dead bodies they feed upon are large, for multitudes of larvæ, beetles, and other insects may often be seen upon such bodies. The larvæ go into the earth to change to the pupa and imago.

SILPHA. The CARRION BEETLE.

"Sæpius ventis agitatur ingens
Pinus; et celsæ graviore casu
Decidunt turres; feriuntque summos
Fulmina montes."

Hor. Lib. II. Carm X.

"The tallest pines feel most the pow'r
Of wintry blasts; the loftiest tow'r
Comes heaviest to the ground;
The bolts that spare the mountain's side,
The cloud-capt eminence divide,
And spread the ruin round."

COWPER.

"So when the elements their combats wage,
The tallest trees bend most beneath their rage,
Whilst humbler plants that grow beneath their shade,
Scarce feel the terrors that the land invade."

MSS. *History of Rome by the Author.*

1.

Low and humble is our station
In the ranks of nature's weal,
She ordain'd our occupation,
She appoints our humble meal.

2

So the whisp'ring breezes tell us,
Swelling with the rising gale,
(Stain'd alas! by tempers jealous,)
Various ranks with man prevail.

3.

Listen then O ye complaining!
Learn from us this truth to know!
Nature in her gifts restraining,
Gives of good to all below.

5.

Whilst the gilded beams of pleasure
Play around with wanton joy,
As the bee collects her treasure,
Or the flies in ether toy.

6.

Gath'ring storms collect around them,
Unseen dangers on them wait,
Till alas! the storm confounds them
In their high and airy state.

7.

Freely then, from flow'r to flower
Culling sweets, the bee may rove
Through the garden's choicest bower,
Or the jessamin'd alcove.

8.

Or through fields of ether flying,
Let that painted gaudy thing
Call'd the butterfly, be trying
All the pleasures of the spring.

9.

We have wings, but less for soaring,
Humbly in the vale we rest,
Flight with us is for exploring,
Where our pow'rs are in request.

10.

There 'tis true we have to labour,
Mine and burrow in the clay;
Still will each assist his neighbour
In the toilsome work of day.*

11.

Free from accidents befalling
Oftentimes the butterfly,
In our lowly dress and calling
We escape the schoolboy's eye.

12.

Shelter'd are our wings from danger
When the storm with wild surprize,
Drowns the unprotected stranger
Gaily roving through the skies.

13.

Ne'er with us our homes are rifl'd,
Nor distress is heard to cry,
As the spark of life is stifled,
Wants of others to supply.

---

* This is a fact. See Kirby and Spence, Vol. 1, p. 253, also 353.

14.

Safety, peace, and joy attend us,
As we bow to Nature's sway;
Nor will rankest things offend us,
Which 'tis our's to clear away.

15.

In the lot assign'd contented,
Nor repining in our task,
Discontent is ne'er fomented,
Nature's boon is all we ask.

16.

So too in their low employment,
Peace and health on peasants wait,
Rest and labour give enjoyment,
Often absent from the Great.

17.

Throbs arthritic, mental fires,
Hypochondria's direful train,*
Ennui,—impotent desires,
Fiction's clouds of fancied pain;

---

* Dr. Darwin in a note on Vitis, (Loves of the Plants, Canto 3, p. 154,) says, that more than one half of our chronic diseases are produced by the practice of drinking wine, and that the Diabetes and Dropsy are occasioned by the use of fermented or spirituous liquors. Other medical practitioners are of the same opinion. Rich and highly seasoned meats

18.

These and many a woe surround them,
In their gilded chairs of state;
These disturb, and these confound them,
Whom the lowly call the GREAT:

19.

And when storms beat on a nation,
On the GREAT they spend their force,
Whilst the poor in humble station,
Oft escape their dreaded course.

20.

Then, whate'er be thy condition,
Learn from us this truth to know,
Rightly fill'd, each state fruition
Gives of good to all below:

21.

Man may wander, but unerring
Is the just decree of fate,
That both good and ill conferring,
Blends them in each earthly state.

---

are I suppose scarcely less injurious; hence the superior health, and consequently greater enjoyment of the poor, than of the rich.

HISPA *mutica*. Lin.

SARTORIUM *muticum*. Illiger.

Ess. Gen. Ch. *Antennæ* closely perfoliated, and surrounded or beset on every side with fine hairs: *Head* exerted, having the Antennæ on each side distant, not approximating at the base: *Thorax* and *Elytra* rigid.

Sp. Ch. *Winged*; black; *Thorax* and *Elytra* rough, with elevated striæ and impressed punctures: *Body* small, oblong-ovate, and slightly convex.

The above character is drawn from the examination of the insect, it is very different from the Linnæan one which does not appear to be applicable to this species. In a simple arrangement on the Linnæan distribution, it would form a good genus, under the name given to it by Illiger, Sartorium.

HABITAT AND ECONOMY. This species is considered rare, as one of the British Coleoptera. It is found in considerable numbers climbing up the sand hills of Cromlyn Burrows near Swansea, probably in search of minute flies for food; nothing farther is supposed to be known of its habits or economy.

HISPA *mutica*, Lin.
SARTORIUM *muticum*, Illiger.

——————"Ultima semper
Expectanda dies homini est,"

HOR.

"'Tis ever well whilst here we stay,
To keep in mind the final day."

1.

Where Cromlyn's sea-girt burrows spread,
Full many a sand-bank rears its head,
That faithless to the weary tread,
Still sinks beneath the feet;
Whilst as the gale springs from the tide,
Their glassy myriads* mount and ride,
Assailing round on ev'ry side
Whome'er they chance to meet.

---

* Every body is supposed to know that sand forms one of the principal ingredients in the manufacture of glass; but, perhaps, few may have observed that the minute particles of native sand have also the appearance of pounded glass, when examined with a common lens. In walking over the Burrows on a windy day, one is surrounded on all sides, and enveloped in clouds of sand, which is far more troublesome than common dust, especially to the eyes. Very probably sand getting in this manner into the eyes, was the cause of the Opthalmia, experienced by the British Soldiery in the course of the late war, on the coast of Egypt This opinion is however denied by learned medical practitioners.

2.

Oft have I met them undismay'd,
Though unprotected,—void of shade,
For science led me where I stray'd,
As Summer beam'd around;
Whilst Carlo, old and faithful friend,
Well pleas'd would all his prowess spend,
Without achieving any end
In ranging o'er the ground.

3.

Ne'er Spring, here, wreath'd in garlands, smil'd,
'Tis all a desert drear and wild,
And like the world to Reason's child
In pathless winding spreads;
Yet even here kind Nature's sheen,*
Though destitute of floral green,
In many a roving form is seen
Where'er the footstep treads.

4.

'Twas mine to learn, 'twas mine to trace
These vagrants of the insect-race,
That wand'ring o'er this arid space,
Could here their joys maintain.

---

* This word is frequently used as an adjective, but it has been used by Milton, and by Lord Byron, as a substantive.

——————" the white city's sheen."

Childe Harold. Canto 3, Verse 61.

In spots perchance the rugged reed,*
Some of their various clans may feed,
For none or scarcely other weed
These drifting hills sustain.

5.

Here climbing up the treach'rous sand,
Which far unlike to solid land,
Where all may run or firmly stand,
Full-often mark'd their toil;
A little troop I oft descry'd,
That picture man in all his pride,
And point to where he must abide,
Beneath the clay-cold soil.

---

* Arundo Arenaria,—this grows in great abundance on the main ridge of the sand-hills, towards the sea; but on the declivities, and altogether on most of the hills, (which are of great extent,) there is neither this, nor any other plant or herbage of any kind whatever. On the inland side, immediately beyond the hills, Arundo arenaria, Galium verum, a small Carex, Thistles, and perhaps one or two other plants are also found. In a similar situation, on the other side of Swansea towards the Mumbles, that beautiful little shrub, Rosa spinosissima grows plentifully; but here also the sand-hills are bare. Vaccinum myrtillus, and Salix argentea, flourish on the coast in particular situations, the former in moist places, a little removed from the sea, and the latter on the level sand.

6.

Error has mark'd their very name,*
And sure in search of wealth or fame,
The sliding sand may fairly claim
To show the fate of man;
And as, whate'er may lure the view,
Defeat will still, and still pursue,
So would the troop their toil renew,
And end where they began.

7.

Thus as the Hispæ strive to rise
And struggle for some unseen prize,†
The faithless summit farther flies,
And still they find defeat;

---

* That is, the generic term Hispa does not appear correctly to belong to this species. See the Synopsis.

† Troops of these little insects are seen eagerly climbing up the sides of the sand-hills, but at first sight it does not appear easy to discover what can be the object of the undertaking, as there does not seem to be any thing beyond them, to invite them forward, however I conjecture that very minute insects traversing the upper parts of the sand, are by the motion made by the Hispæ, precipitated below, and so become their prey. Most sand insects belong, though of several different orders, to that very useful set or kind which appear to be appointed by nature to restrain and keep others within due bounds, i. e. they feed on insects.

Whilst o'er their heads in feathers gay,
Their sable plumes* around them play,
Such as bedeck the closing day,
Of one no longer great.

8.

So bliss unreal lures the child,
So in the world is man beguil'd,
Till Faith and Hope in accents mild
Have whisper'd other joy,
Beyond the sliding paths of life,
So oft with disappointment rife,
That erst have mock'd his weary strife,
And been a vain employ.

---

* The sable plumes, are the Antennæ, which have always appeared to me to bear a great resemblance to the nodding feathers of the hearse; and therefore by a very natural association, point to the ultimate abode of mankind.

COCCINELLA.

The LADY-BIRD.

Ess. Gen. Cha. *Antennæ* short, thin, clavate; the club obliquely truncate: *Palpi* short, the principal, or maxillary one, ending in a large, triangular, or hatchet-shaped joint: *Body*, together with the *Head* and *Thorax*, above hemispherical, beneath flat: *Feet* short, capable of bending flat against the abdomen; *Joints* of the tarsi three in each foot.

HABITAT AND ECONOMY, The Coccinellæ, both in the larva and imago state, are found on various plants; sometimes they are abundant on nettles; but it has been observed, that their food consists in the Aphides or Plant-lice, which are often numerous on the plants where they are found. Hence as the Aphides are prejudicial both to the growth and beauty of the plant, the Coccinellæ are very serviceable in destroying them* The Larvæ are small dark brown, or black grubs; the Pupæ cling to cavities in stones, and other seclusions where the elytra and wings, which are folded above them, are gradually matured. A few of the perfect insects of the last brood retire at the end of autumn to their hibernacula.

* See Kirby and Spence's Introd. Vol. 1, p. 266.

COCCINELLA. The LADY-BIRD.

" Tota mihi dormitur hiems."

" th' imprison'd worm
Is safe beneath the frozen clod."

COWPER.

1.

'Tis thine O Science, thine to trace
Mysterious o'er the green,
The Pow'r that leads the insect-race
Protective through the scene.

2.

For in them sure that pow'r shines
With wonder-beaming light,
And ev'ry step of theirs defines
Its glory and its might.

3.

'Tis like the Pillar and the Cloud
To Israel's favour'd seed,
For so it shines, and spreads a shroud,
A shelter with its lead.

4.

It spreads an ample shield sublime,
From Winter's keenest rage,
And rises o'er the sweep of time,
In each succeeding age.

5.

Thus whilst the autumnal day is mild
And balmy zephyr's spread,
As if aware that Winter wild,
Was low'ring over head,

6.

Full many a little insect band
Regardless of the mead,
Though florets yet may deck the land,
Obeys its silent lead;

7.

And seeks afar some shelter'd cave,
Some secret hiding place,
To guard them from the winter's wave,
And save their future race.

8.

Keen blows the wind, and biting cold
Benumbs the face of day,
The cattle seek the sheltering fold,
And birds no longer stray.

9.

Deep howls the storm, the wintry blast,
And ceaseless torrents swell,
Or frost relentless shackles fast
Within his ice-bound spell.

10.

E'en man himself shrinks from the scene,
And shiv'ring all appall'd,
Sighs wistfully that Summer's green
Were once again recall'd.

11.

Our little fugitives the while
Are kindly wrapt in sleep,
Nor heed if Nature frown or smile
Whilst they their sabbath keep.

12.

Poor, feeble race, how soon would end
Your days in Winter's sleet!
But Winter all his shafts may spend,
They reach not your retreat.

13.

O gracious and benignant care!
O Pow'r supremely wise!
Whose fost'ring arms so kindly bear
The insect where it lies.

14.

Thou rockst it in its cradled nest
Unconscious of the storm;
And when 'tis time to break its rest,
Thou wakest its slumb'ring form!

15.

'Tis thus the pretty Lady-bird
In all her tribe is kept,
Till Spring's re-echoing voice is heard,
And vibrates where she slept.

16.

Now beauty blossoms on the spray,
And all the scene is joy,
Now will the genial month of May
Their tend'rest cares employ.

17.

And now a little brood will spread,
And still increasing grow,
And by the hand of Nature led,
Will wander to and fro.

18.

Where'er the sickly plant is found,
O'erspread by filmy blight,
Of frosty troops that gather round,
Like misty clouds of night,

19.

There will our pretty troop appear
Spontaneous on the tree,
'Tis theirs the tainted leaf to clear,
The beauteous blossom free.

20.

O! where in vary'd colours drest
The gay parterre extends,
Be there the generous aid confest,
Of these—their willing friends.

CURCULIO.

The WEEVIL.

Ess. Gen. Ch. *Head* produced into a distinct *Rostrum* or beak: *Antennæ* sub-clavate, seated upon the rostrum: *Mouth* small, at the end of the rostrum, generally concealed, and apparently without lips: *Body* generally an elongated, convex oval; in some species short and somewhat round, rarely cylindrical or sub-cylindrical: *Feet* having the tarsi with four joints.

HABITAT AND ECONOMY. Two hundred and thirty-four species of this genus (or rather tribe) have been described as British, by Mr. Marsham, some of these have been since discovered to be only varieties, but so many new species have been added, that in all probability an enumeration of those now known, would extend their number to upwards of three hundred. Their *habitat* is variable and diverse, but very many of them are dispersed in our fields over a variety of plants, some of which are only partially serviceable to man, and others altogether neglected both by him and his domestic animals. Hence therefore they are generally inoffensive; many possess rich colours, some are elegant in their shape, and others have latent beauty.

Heavy charges have however been alledged against some of their species. Cur. contractus is supposed to have been injurious to the turnip:* Cur. vastator is related to have destroyed in one night, several hundreds of the grafts of young trees, in a nursery in the neighbourhood of London:† a few other species are said to be similarly detrimental to us in the fields; but Cur. oryzæ and Cur. frumentarius and granarius, appear to be the chief, if they are not the only species of the Curculio kind, that sometimes commit serious and extensive devastations on our property; the former by its attacks upon rice, and the two latter by theirs upon corn, both in the dry state; a French author speaking of the last species, says " et les charancons á rostre effilé, dont là larve ainsi que celle de l'alucite, dévore le froment, consume souvent la nourriture des nations et les réduit aux horreurs de la famine." Faune Parisienne par Walckenæer. Tome 1, 59. The same language is held by Cuviér, or rather by Latreille, who confessedly wrote the volume upon insects for Cuviér; see le Regne Animal par Cuviér, Tome 3, p. 329; and Kirby and Spence (Introduction, vol 1, p. 73;) and perhaps all other writers upon this subject, speak of it as a pest: even the illustrious Swede, whom I should not suspect of any design of magnifying his subject, says, speaking of frumentarius,* "maximè noxius." Nevertheless, notwithstanding this weight of evidence as Cur. granarius, which is confessedly the worst of the three, is common, and as I myself have witnessed instances where it had established itself, I am entirely of opinion that it is not very seriously detrimental; if it were so, old warehouses where they abound would be abandoned, and consigned to other purposes than the corn trade, which is never the case; the fact I believe is, that though it may be a subject of regret to the dealer who may have them in his corn lofts, or may serve to excite his ingenuity and vigilance in opposing their ravages; yet those ravages amount to so little, that they do not even affect his profits. This is my own opinion, and this opinion is drawn from instances and facts; but it may be erroneous. It is indeed obviously true, that they might become all and more than all that they have been represented to be, if it were the will of Providence that this should take place; it is therefore, among many others, a perpetual and daily memento of our continual dependance upon the Supreme Disposer of events, and in this it is a real, serious and abiding good, which far outweighs the trivial injury of its ordinary sustenance. What I have said of this species may be applied to frumentarius, Oryzæ, and to others similar. Should however any individual be so weak as to inter from what is above said, that we ought therefore to leave them alone, I answer by no means, unless it be of no consequence; for it is always our duty to do the best we can for ourselves, provided it be done without unnecessary cruelty; for if we suffer them to increase to a great extent, when it is in our power to prevent it, we bring the evil upon ourselves, and are eventually justly punished for our negligence: if it were right for them so to increase, no efforts of ours could prevent it, any more than it is in our power totally to exterminate the species, which it would be folly to attempt. It is on the contrary reasonable to suppose that the depredations of insects upon us and upon our things, was designed to excite in us an attentive consideration of the best means of opposing or destroying them; as well as to awaken our observance of their habits and history, by which we shall be more and more led, as our knowledge of them increases, and as false views and wrong prejudices are dissipated, to admire and to adore the wisdom and the goodness of the Supreme Cause.

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* See Kirby and Spence, Vol. 1, p. 189.

† Ib. 200. (Why did not the nurseryman contrive some means of preserving his grafts from them? or of deterring them from the attack? surely it might be done; and certainly such is not the only food of this species, it appears to be very well able to live inoffensively.)

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* I cannot tell whether there be any error in the account usually given of Cur. frumentarius, I never found it in warehouses, but often in the fields; and I believe it is not mentioned by Kirby and Spence among the injurious insects, and it is not likely that they would have omitted it, if it were really among those that attack dry corn. Even the great Linnæus might be mistaken, misled perhaps; might not his "maximè noxius" be intended to designate Cur. granarius?

The Larvæ of the Curculiones appear to be short soft grubs; one of them is frequently found in the nut, and is likely to have been noticed by most persons; this, when it has consumed the nut, and is sufficiently grown, makes its way out, and buries itself in the earth, where it remains in the pupa form till the following year, when it comes out an elegant species of this genus: this is Curculio Nucum: very likely other species may have a similar history, only the habitat be different: but some are likely to be preserved during the winter, in the imago state, in hibernacula. The upper branches of Figwort, (Scrophularia aquatica, and nodosa,) plants very common in our hedges, will often in the Summer months, be found to contain several roundish, yellow, sub-pellucid, silky balls, within each of which is a little body, neatly wrapped up, and in a quiescent state; this is the pupa of one of the species of Curculio, that inhabit this plant, and may serve as an example of the pupæ of this tribe, though great variations must be supposed to occur in their appearance and manner of preservation.

For an account of the division of this Linnæan genus, or NaturalTribe, into other genera, see the Synopsis, p. 97. For Mr. Marsham's division, see the Ent. Brit. p. 237. For those of Linnæus, the Systemma Naturæ.

Contents of the Poem on the Curculio.

I. The supposition that flowers waste their bloom, or that they flourish to no purpose, when in secluded situations, an erroneous sentiment.

II. The system of Nature is composed of a graduatory chain of existence, every part of which has its just value.

III. That chain slightly illustrated, and Insects shown to occupy a situation which would be void without their existence.

IV. Excursion into the fields;—general position that our own fields contain many plants which appear to be of but little service, except to feed Insects.

V. The Curculio Tribe chosen to show that plants, and parts of plants, UNUSED, ARE NOT WASTED, but serve to support the lives of innumerous beings. Instances of plants of no use to mankind, either directly, or indirectly, being so occupied.

VI. The unused parts of useful plants occupied by Insects: exemplified by instances taken from the genus Curculio.

VII. Variations in the habits of our Tribe. It still very amply illustrates the position, notwithstanding these variations. Instances of Plants not occupied by Insects: these exceptions do not prevent the moral and doctrine of the Poem. Conclusion of this part of the subject.

VIII. In countries hitherto unpeopled, every thing is occupied either by Animals of various description, or by Insects, as in our own fields. The Conclusion.

CURCULIO. The WEEVIL.

" These are thy glorious works, thou source of good,
How dimly seen, how little understood!
Thy power divine, and bounty beyond thought,
Ador'd and prais'd in all that thou hast wrought."
Retirement. COWPER.

" Ici sur des rameaux, l' insect qui voltige,
Et qui vit folàtrant de l' une à lautre tige,
Saisit un germ heureux, &c."
JOLYCLERC.

" And yet was ev'ry falt'ring tongue of man
Almighty Father! silent in thy praise;
Thy works themselves would raise a gen'ral voice,
Even in the depths of solitary woods
By human foot untrod, proclaim thy power,
And to the quire celestial THEE resound,
Th' eternal cause, support, and end of all."
THOMSON'S *Summer.* V. 182.

I.

Far o'er the Eastern and the Western main,
Prolific Nature holds her genial reign
O'er climes, if known, but barely known to man,
Perchance o'er deserts since the world began;
There, latent floral beauties blush and die,
Nor bloom to joy the rapture-speaking eye:
Hence fab'ling poets in their songs have told
How Nature WASTES her jewels and her gold;

Breathes rich perfume where none can taste the gale,
And spreads her lux'ries o'er th' untrodden vale;
And with profusion of unbounded sway,
Flings precious wealth, like useless trash, away.
Yet sure a doctrine so replete with shame,
That dares in thought GREAT NATURE's scope to blame,
Still unseduced by poetry's sweet dress,
A moment's pause had taught them to suppress.
What if the mystic veil that Nature bore
Conceal'd from them the secrets of her lore!
What if the infant Science fail'd to raise
That hallow'd veil that shrowds the Eternal's praise!
Shall then the daring thought of pride declare
They "WASTE* their sweetness on the desert air."

---

* It has been objected to this poem, that Gray did not intend the word WASTE should be understood in the sense I have supposed. Whatever might be his intention beyond the plain meaning of the verse, I cannot presume to say; the word itself appears to me clear, definite, and positive: he seems to have considered that, as WASTED, which is of no service to man; as though man were all in all, and every

Presumptuous bards, how little do ye know
Of Nature's system in this scene below!
E'en from the desert Science oft has brought
Rich stores of beauty, and fresh scope for thought;
And floral beauties, difficult to gain,
Have prov'd, and will, they were not made in
vain.

thing in the creation;[°] this I believe to be a very common *error*, and I conceive it right for me, in the present undertaking, to oppose it, as I really believe it to be false and wrong. I have no desire to calumniate the memory of Gray, whom I believe to have been an amiable and good man. Far indeed be it from my wish, unnecessarily to depreciate a poem which is an ornament to the English Language, and an ever blooming laurel to the fame of its author. I simply wish to give my protest against the sense in which I suppose the verse alluded to, to be usually understood; and so far as is in my power, to prevent the young reader from supposing, that because certain parts of the creation are not of any immediate service to man, that they are therefore of no use, or in other words are WASTED; and to point out to him in what manner they promote the general scope of felicity—the common good, although they may bear but a very slight, or even no relation whatever to man.

[°] This same opinion is contended against in the Essay on Man, by Pope; I however do not borrow my creed from that poem. See Epistle 1, particularly see 5, 6, 7, 8; also the beginning of the 3rd Epistle. My view of the subject is confined to that illustration of it, which correctly and forcibly belongs to the Natural-History of Insects.

But 'tis not mine to trace their use to man,
He is not all in all in Nature's Plan.

II.

As many a little rill its aid bestows,
Where broad and deep the mighty river flows;
As many veins of microscopic thread,
Unite to aid the vital power to spread:
So too in Nature many parts combine
To form the WHOLE majestic and divine;
And as in states where num'rous ranks arise,
So vary'd being class on class supplies;
Myriads of forms surround th' ETERNAL THRONE,
Nor from the earth the rank of man alone:
All shapes all sizes, whether small or great,
From man to beings in the INSECT STATE:
From the GREAT SOURCE they draw the vital ray,
Praises to HIM their lives of joy display;
Nor can that efflorescence bloom in vain,
Whose leaves, whose blossoms swarms of life maintain.

III.

Whilst Man supreme and chief o'er all the earth
Commands and governs from superior birth;

Whilst subject to his sway, or wildly spread,
The lion ranges and the steed is led;
Whilst many a wond'rous form Mammalia gives,
Where sense and instinct still more wond'rous lives;
Whilst beauty paints, and music tunes the race
That sail unerring through ethereal space;
Whilst fish disport beneath the lucid wave,
And land and sea, thy tribes, Amphibia, brave,
To fill the circling tide of life and joy,
Complete the whole, and ought unus'd employ;
To give to life those mellow forms of green
Which shine and decorate the vary'd scene,
Which oft resplendent and of many a die,
To mimic skill their glowing tints supply,
But useless else,—the active Insect breed
For this were call'd, and scatter'd o'er the mead,
That in their tribes the life of joy might dwell,
Upon the leaf and in the blossom's bell.
Of other parts in that stupendous plan,
Rising from things inert to sapient man,
Or how connected, is no theme of mine,
Though Wisdom will through all for ever shine.
Nor need I here that Insect lore explain,
Which shows what other ends their kind maintain:

'Tis simply mine with careful heed to trace
How Insect-life repletes this vacant space;
How Insects claim by birth, as Nature's
dow'r,
Each plant neglected, each neglected flow'r.

IV.

The refluent charms of Spring's unfolding green
Invites us forth to taste the youthful scene;
The wintry bands which bound the Insect kind,
Its kindling breath unloosens to the wind;
With gentle touch awakes their drowsy forms,
And lulls to pupal sleep their infant worms,[*]
Till both alike arise on lucid wing,
The beamy flutt'rers of rejoicing spring;
Adown the vale their many colour'd breed,
In sportive bands their little gambols lead,
Fill all the scene, and people ev'ry mead.
There Flora's children op'ning to the day,
The rising beauties of their youth display:

---

[*] Many insects are preserved, as has been already shown, during the Winter in the perfect state, dormant in secretions or hibernacula; several also live in the larva state, during the Winter, and change to the pupa in the Spring, and after remaining a short time in that state, come out adorned with wings, elytra, &c. according to their kind; numerous Lepidopterous species remain all the Winter in the pupa.

There let us wander, and with truth in view, 90
The ramblings of the Insect-race pursue ;
And watch the buddings of the infant spray,
The floret bursting with the breath of May.
And sure of Flora's iri-colour'd train,
In ev'ry mead full many blush in vain, 95
Were man's chief good, the sole and only end
To which th' all vary'd powers of Nature tend.
BUT 'TIS NOT SO, else wide exuberant waste
O'er Nature's form prolific might be trac'd :
Whilst many a plant by man unheeded lies, 100
Nor yet the flock or herd with food supplies ;
Nor songster free, nor beast that roams the plain
Its growth regards,—yet will it still sustain
Abundant forms of life's all-grateful flow,
And fill the circling scene of good below : 105
And oftentimes when man selects alone
The sturdy wood, mature, and fully grown,
Plucks the rich fruit, or crops the fib'ry stem,
Neglects the leaves, and aye its flow'ry gem ;
Or herds well-pleas'd, browze on the juicy blade, 110
Reach not the root, nor e'er the trunk invade,
In Nature's course, as Wisdom has ordain'd,
Where she directs, and by her pow'r maintain'd.

Root, bark, leaves, wood, and ev'ry milky vein,
Tribe after tribe of Insect-breed sustain : 115
But round the flow'r innum'rous swarms unite,
Its pollen, honey, leaves, their toils invite;
Whilst they perchance their little thefts repay,
As brushing by their downy coats convey
The pollen to the pointal's lofty reed, 120
And heedless aid to fertilize the seed.

V.

Of all the busy forms that fill the scene,
Sport round the flow'r, or dance upon the green,
No tribe more various, better can supply
Proof of the question, which 'tis ours to try, 125
Than the Curculio or the Weevil kind,
Then let us seek their pigmy troops to find :
A plenteous tribe, dispers'd in all our meads,
As Nature's voice to floral banquets leads.
On the rough couch by purple Echium[*]
spread, 130
One kind reposes, by her bounty fed :
And many on the Nettle[†] take their meal,
Nor yet its roughness or its stings can feel;

---

[*] Echium vulgare, Viper grass: Cur. Echii.

[†] Dr. Withering says of the Nettle, (Urtica Dioica) that it has been applied to restore paralytic limbs, was formerly used as an astringent, and that the stalks might be manufac-

So on his arrowy bed for torture made,
The naked Indian stretches undismay'd,
But not like them by truth and Nature led
To sport innocuous and with joy be fed;
He lives a martyr,—martyr to a lie,
Subsists on pain, and glories but to die.
The prickly Thistle,[*] whose wild form bestows
The sister emblem to the beauteous rose;
Upon her rugged lap or downy breast,
Nurtures two more, and soothes their wants to rest.
Two rustic sister-plants,[‡] whose homely grace
Delights the flutt'rers of the Vispa race,[†]
Nurse on their laps a beauteous little band,
Protect and keep them with a bounteous hand;
They, Didynamia's children, love to dwell,
Fast by the rippling of some bubbling well;

---

tured into cloth or paper, like hemp or flax. Nevertheless it is so much neglected, and so much superseded by superior things, that I have thought it no violation of truth, to class it among those plants which are of no service to man or his domestic animals. The species that feed upon it are Cur. Urticæ, Cnides, Ovatus, and several others.

[*] Cardium, Cur. ovatus, and two other unascertained species.

[‡] Scrophularia aquatica and nodosa: Cur. Scrophulariæ, Hortulanus, immunis, bipustulatus, &c.

[†] Vespa Anglica may be seen almost constantly around these plants in great numbers, when they are in flower.

Though one strays more upon the meadow's side,
And in the forest's gloom will oft abide;
The other too sometimes will court the stream,
Whose beauteous front shines with the morn's bright beam;
Where'er they wander, there our troop are led,
Still will they rock its infant's silky bed,
And young and old alike by them are fed.
On eider-down in Epilobium's[*] care,
One troop reclines and sips her milky fare.
The slim Alisma[†] of the rural rill,
Where Menyanthes[‡] folds her milk-white frill;
Crowfoots[¶] their gold with silv'ry disks adorn,
And Water-lilies[‖] rise to greet the morn,

---

[*] Epilobium hirsutum—Cur.—a small species not ascertained.

[†] Alisma Plantago, Cur. Alismatis.

[‡] Menyanthes trifoliata, Marsh Trefoil or Buckbean.

[¶] Ranunculus aquatilis, Water-Crowfoot.

[‖] Water-lilies. Nymphæa, lutea and alba, open their flowers, and I believe elevate their flower-stalks, in the morning, and close their petals again in the evening.

Spreads out afar her pretty, slender arms,
And gives one species all her tender charms.
Like the gay streamers on the ship-mast's head
The purple Willow-herbs* their pinions spread,
Catch the light gale that floats along the tide,
By Frome, sweet Avon,† or old Severn's side,
But not alone to beauty give their glow,
Joy the best gift their tow'ry forms bestow,
For on their green and in each purple cell
Our Tribe can boast their little legions dwell.
Malva‡ and Inula§ and many more
To feed this tribe expand their leafy store.
All these and many a blooming growth beside
That seem to swell in vain the meadow's pride,

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* Purple spiked Willow-herb, Lythrum Salicaria:—Cur. Lythri, Salicariæ, and one or two others.

† Shakespeare's Avon is the same that waters and beautifies the delightful meadows of my native home, Tewkesbury in Glocestershire.

‡ Malva sylvestris:—Cur. Malvæ, rufirostris, &c.

§ An undescribed species. With respect to these undescribed species, all that I am able to say, is, that they do not appear to be known; they have most probably been sent along with other insects to the late Mr. Marsham, also to Dr. Leach, without any information being obtained from them.

That seem but born to decorate the field,
Beauty the greatest gift their forms can yield;
That harsh or tasteless to the browzing breed,
The cattle leave to wither in the mead;
Whose flow'ry forms by man neglected lie,
Nor ought of usefulness to him supply;
All, all, a multitude with fond delight
Thus claim, and own as theirs by native right;
Sport on each leaf and revel in each bloom,
And oft adorn the plant they still consume.
Thus whilst by thy mistaken view they're seen
As merely trappings to adorn the scene,
Like frill and lace by frolic's fancy led,
A feeble show that flutters round the head;
Ten thousand, thousand, happy forms combine
To tell thy reason they are all divine:
Nature is all complete,—to thee she deigns
Their vary'd show,—for them their use remains.

VI.

In sylvan scenes where verdant arches bend,
And flow'ry pyramids* and domes ascend

---

* The most remarkably beautiful of our trees to which this character would apply, is perhaps the Horse-Chesnut, Esculus Hippocastenum; it blossoms in spring, when the whole tree, much in the form of a conular pyramid, is entirely covered with their beautiful expansion.

Scenes of bright promise, where the powerful Oak
Is gath'ring strength to meet the woodman's
stroke,
And slowly forms that knotty, veiny plane
Which yet shall social mirth and glee sustain; 200
Or bear th' intrepid, hardy British Tar
Through the fierce conflict of his thund'ring war;
Or, yet more dear, with commerce shall expand,
And bear the fruits of peace from land to land;
Where the tall firs in silent growth prepare 205
The future honours of the oak to share;
There, pigmy states in sylvan cities dwell,
And insect hermits build th' unsocial cell:
All bounteous Nature there divides her care,
And tribes on tribes with man her bounty
share; 210
And there, amid the o'er-arching leafy shades,
Our chosen Tribe in many a clan pervades.
And o'er the heath and on the meadow's green
Their various breed on plants of use are seen,
But not obstructive of the future good, 215
The flow'r the leaf is theirs, and man's the wood;
Or if perchance the luscious fruit should fall
To them, from man, whose grasp would seize
on all,

So light, so scatter'd, is the evil dealt,
By sovereign man the deed is scarcely felt.
Where on the heath the humble cottage stands,
With Ulex* oft the blazing hearth expands;
And where Saint David meets the refluent tide
The Thorny Ulices his fields divide;
Two of our tribe, whilst blooming in the field,
A sweet repast their amber blossoms yield.
The baby-life of one is safely led
Where Hazel † curtains round his leafy bed,
Walls it secure, whilst many oft unseen
Disport and wander o'er her leafy green.
On the tall Elm, ‡ whose wavy arms defy
The rudest tempests of the troubled sky,
Their kind repose, regardless of the blast,
Firm as the ship-boy on the tow'ring mast;

---

* Ulex Europæus and nanus: the first is the common species of Furze: Cur. Ulicis and rigidus, and I believe one or two others.

† Corylus Avellana, the Nut Tree or Hazel: Cur. Nucum, in the Nut; Cur. Coryli, Attelabus avellanæ; and I believe Cur. Macularius, and one or two others.

‡ Ulmus: Cur. oblongus, rufescens, Mali, Alni, ferrugineus, and I believe several others.

Secure they ride upon his heaving vest,
His trembling sinews and his nodding crest.
The slender featured Birch,[†] the haughty Beech[‡]
Claim of this tribe at least one species each.
From branch to branch where mellow Osiers[§]
bend,
Their active bands in Insect-sports contend,
And, heedless of the mighty fosse between,
Leap far and fearless o'er their lucid green.
The monarch Oak[‖] within his vast domains
Species his own in countless troops sustains;

[†] Betula alba: Cur. Betulæ, and another belonging to the same division, very splendid species.

[‡] The haughty Beech, Fagus sylvatica: I have called it haughty because in general other trees are not associated with it, and it will not admit herbaceous plants to grow beneath its shade. Cur. Fagi is stated by Withering to be found upon it, and I believe I have found one belonging to the division of Saltatoriæ, but am uncertain of the species.

[§] Salix vitellinæ:—Cur. Iota, Salicis and Oxyacanthæ among the leapers; and Cur. Lapathi, and I believe one or two others among those with the Rostrum bending under the Thorax.

[‖] Quercus ruber, the Oak, Cur. seleneus, "fuscus, coleoptris griseis; maculâ posticâ communi lunulari pallidâ." Marsh. Cur. argentatus is more like pure, bright, fretted gold of a pale colour, than silver.

Some with bright scarfs or silv'ry bands enroll'd,
Whilst others shine in green or fretted gold.

In meadows where the shepherd's meek-ey'd care
With tender bleating swell the echoing air;
The lowing heifers stray, the snorting steed
From toil and task rejoices to be freed;
Where Nature's bounty shines in all around,
Fills the rich vale and mantles o'er the ground;
Where floral buds and blossoms blooming gay,
Bright with the morning dew the ev'ning spray,
Wave o'er the field in beauty's own array;
Where rural runnels glide from glade to glade,
And toil's rich culture is in all display'd;
Scenes sweetly felt, but feeble, fault'ring, faint,
Words e'er must be that would such scen'ry paint;
There spreads the bush, the guardian of the fields,
Whose course directs them, and whose shelter shields:
The Hawthorn-Bush,[†] whose brilliant charms invite
Our little prattlers with so much delight,

[†] Cratægus Oxycantha, Hawthorn, Whitethorn, or May-Bush.

When bright Hygeia and her Nymphs may lead
Their infant ramblings through the vernal mead.
How sweet its breath perfumes the rising gale,
Diffusing odour through the bounteous vale!
Leading the blossoms, with what bright display
It crowns our hedges with its blush of May!
Nor does it simply cheer the sense and sight,
But shines with bounty as with beauty bright;
The little Linnet and the mellow Thrush
Commit their offspring to its thorny bush;
And when the chilly winter spreads around
His dreary mantle o'er the frozen ground,
Its winter provender will serve to feed
The feeble stragglers of the feath'ry breed.
But, more diffusive in the joyous spring,
Its ample flow to Insect-forms I sing.
Like some fair maid whose charms delight the view,
Whose fairer thoughts the paths of good pursue;
Who feeds the wand'rer, and delights to raise
That beaming joy that swells the hymn of praise;
So our lov'd Bush the little wand'rer feeds,
Invites afar from all surrounding meads

Innum'rous swarms that bless its vernal sway,
And hail around the bounteous Bush of May:
There dress'd in shining bronze and purply red,
In eager crouds full oft th' *Equati*† spread;
And there in orient blue or burnish'd green 290
The splendid *Bacchus* too sometimes is seen;
There *Fasciatus*, there the *Bruchi* stray,
And greet with them the sweet return of May.
Like these full many leafy forms benign,
That shade the forest, or in meadows shine, 295
On man supreme their chiefest wealth bestow,
In him they center and for him they grow:
Yet Nature's bounty farther still extends,
And with man's good some other purpose blends,
For whilst the leaves the gale of life inspire, 300
Nurt'ring the whole to meet mankind's desire,
And loosely wave in vary'd green or grey
The graceful mantle of the vernal day;
Or waft sweet incense on the morning's wing,
The grateful off'ring of rejoicing spring; 305
And whilst the flow'rs nurse the rip'ning seed
And yield their young ones to the bounteous mead,

---

† Cur. Equatus, Bacchus, fasciatus, pediculus, and others. The last named is, I believe, a variety of fasciatus. The genus Bruchus is very nearly allied to the Curculio.

Thus still around their various beauties stray
The busy myriads of life's joyful day.

And of our Tribe, where rapid Fungi shoot
At Bethlem's Stars'[†] and at the Sea-Pink's[‡] root
Some love to dwell;—where fails the tree, decay'd
By time and age in some neglected shade,
Or the lorn Ash[§] upon the meadow's brow,
Where long it bloom'd, but feebly withers now,
All grey with age, o'er-run with mossy rime,
There, from the all-rapacious hand of time,
Some seize upon his fastly sinking prey,
The bark, the wood, which man has thrown away.

[†] Ornithogalum:—Cur. porcatus mentioned by Mr. Marsham.

[‡] I found a black, and probably an undescribed species, at the roots of this flower on the rocks, near Tenby. It is nearly allied to Cur. arenarius and niger, but most like the former. Cur. arenarius is not mentioned by Mr. Marsham, and may be a MSS. species: I had the name from Mr. Dillwyn, a Gentleman well known as a Naturalist.

[§] Cur. latirostris, brevirostris, and albinus.

Thus root, leaf, flow'r, excrescences and all
Our Tribe can show to little insects fall,
And leave *no room for waste*, no thankless void,
'Tis grace and beauty all, and all employ'd;
Or else by Nature's Children 'tis enjoy'd.

VII.

Such is our Tribe, and yet a vary'd few,
A diff'rent course for sustenance pursue;
Some roving wildly, solitary chase
Their vagrant brethren of the pigmy race.
With modest aspect, and in sober grey,
Attir'd sometimes,—sometimes in bright array,
With brilliant belts and num'rous stars between,
Stray's *Maritimus*† o'er that desert scene,
That far unlike the verdure of the mead
Yields nothing but the rugged sand-born reed.
This is his citadel, from whence he spies
His little victims in some heedless flies;

---

† Cur. maritimus. I have repeatedly taken this species, in the situation described, with small flies in its mouth, and for a long time preserved one so circumstanced in my cabinet. It is probable, but not that I know, certain, that some other species may have similar habits. Cur. niger, arenarius, Anglicanus, floccosus, and other wandering species are likely to be of this kind.

An easy prey, yet, wingless he, their flight
Had quickly borne them from his prowling sight;
But Insect-forms are often deep in art,
And play with matchless skill the cunning part;
Whether that guile like this or force succeeds,
Such is the prey on which our wand'rer feeds.
So in the wood and o'er the extended plain
Some few perchance their little chase maintain,
And like the hunter feast upon the slain.
And what if some[†] within the gran'ry dwell,
Or others[‡] range where podded Vetches swell?
These, thought our foes, if rightly understood,
Methinks may live promotive of our good:

[†] Cur. granarius and frumentarius. (See the Introduction to this poem).

[‡] Cur. lineatus, and some other species are found in Pea and Vetch fields, sometimes in great numbers; I suppose they breed in those plants: the mention of them was omitted in enumerating the species considered injurious in the prose account of the habits of the tribe. However, the omission might well be justified, for most probably they are in general very little injurious, but here it is proper to mention them, because it is possible that they might become so.

Small is their theft, and yet their pow'r of
harm,
Might strip the gran'ry and lay waste the farm,
But well we know—the blissful year can tell
That He who governs, governs all things well;
Nor these can spread, nor those extend their race
Beyond the suff'rance of supernal grace;
And He who crowns the labours of the swain,
Purples the fruit, and swells the rip'ning grain,
Whose bounties breathe and glow in ev'ry gale,
Wave o'er the forest, and enrobe the vale;
Who o'er mankind in love and mercy reigns,
Their being His,—His pow'r their flow restrains.

Still from the woodland scene, the flow'r, the
spray,
Our vary'd Tribe will witness to my lay,
If ought were vacant Insects there pervade,
Live on the bloom and shelter in the shade;
The latent flow'r by deepest woods embrac'd,
Or marsh impervious,—blossoms not in waste,
There whilst the wild Bee murmurs round its
gem,
The Beetle lives upon its leafy stem.

Thus Nature, all-beneficent and wise,
To scatter'd wildings usefulness supplies;
In all, delights in life,—the life of joy,
And gives to Insects what Man can't employ.
And, if perchance the glade or shelt'ring wood
Should rear the plant that seems to do no good,
That yields no charms to stay the busy Bee,
That blooms untasted and from Insects free,[†]
Here haply Nature's patient hand may guard
Some hidden good that yet may worth reward;
That like Cinchona's or the Fox-glove's wealth
Shall pain allay,—inspire the tone of health;
Or else perchance some atom-forms explore
Unseen its depths, and revel in its store.
Or, if in climes remote, some floral form
Should cloud the scene and breed the deathful storm;

[†] I thought it necessary to suppose that there may be instances of plants of no known services to us, and not apparently occupied by Insects. This I have done merely to preclude the cavils of those who might otherwise assert it; nevertheless, if there be such instances, which in truth I think very doubtful, they are certainly very rare.

Should reign the despot round whose gloomy throne
Life sinks oppress'd, and nought but death is known;
Who from his baleful height like Nero sees
His feeble victims fall in ev'ry breeze;
The Bohun Upas[†] of some Eastern wild
Where thirst of gold has led Europa's child,
Taught him to barter health and peace away
For the frail riches of life's little day,
Steel'd all his heart to sympathy's control,
And rais'd an iron altar in his soul,
Where Mammon's hateful offerings arise,
With rapine, carnage, death the sacrifice;—
If round this Hydra-form pale death assails,
And rides triumphant on mephitic gales;
Though reason cannot pierce where sense grows pale,
To learn the wisdom of its moral tale,

[†] This account of the Bohun Upas is taken from Dr. Darwin's Botanic Garden.—It appeared to be necessary to mention it as forming an exception to the general rule that Insects occupy plants or trees or the parts of them that are not used. The Gum of the Upas is reported to be used as a strong poison; but the existence of the tree has been doubted, and I do not vouch for its truth. See the Bot. Gar. vol. 2, p. 143.

Yet justly taught by ev'ry leaf and flower
That fall within her microscopic power,
No sickly doubts her rooted faith oppress,
For well she knows that nature reigns to bless.
Whether, as here when thunders peal around,
And Heav'n's broad arch reverberates the sound,
When clouds dispart, and gleaming light'nings fly,
But leave a purer air and brighter sky,
So there the Upas' torpid touch may clear,
Except its own,—the Eastern atmosphere ;—
Whate'er its use, whilst all around us shine
Wisdom, benevolence, and grace divine,
If Nature's veil conceals the latent good
Which Reason doubts not, though not understood ;
Perhaps 'tis meant to teach man's erring pride
Faith must supply, where knowledge fails to guide :
So partial shades o'er-veil the meadow's green
As clouds flit by in summer's noon-day scene ;
So where eclipse, with transitory sway,
Obscures the sun and hides the face of day,
Faith, born of knowledge, with unalter'd view
Perceives him still his wonted course pursue ;

So too, an hallow'd veil Religion draws
Around the sacred founder† of her laws,
A mystic veil which learning's letter'd pride,
Docetes, Gnostics, Ebionites have tried,
And quarrell'd much, but fail'd to set aside.
OR, if like pleasures that entice to joy,
Ensnare the thought and lure but to destroy,
Some bright Siléne‡ should with faithless mein
Allure the fly that dies upon its sheen :—
THESE have their place in Nature's ample pale,
And few and distant cannot countervail
The scope and moral of my simple tale,
That Nature knows no waste, where'er she leads
Her flow'ry train, o'er plains, deep woods and meads,

---

† Is it unreasonable to believe that the sacred person of the Founder of Christianity—the Son of Mary,—and acknowledged by a miracle to be "the well-beloved Son of the Eternal," is too sacred and too august to be immediately approached by human contemplation,—and that it was the design of the religion of Christ—by the ineffable mystery of the Trinity and Incarnation, to throw a veil over the nature of his person?——The sects alluded to were among those who disturbed the early ages of Christianity. Many such have existed, probably have done much harm, and apparently have been equally silly and equally useless..

‡ Siléne: Catchfly. See Darwin's Bot. Gar. vol. 2, p. 19.

Full rolls the tide of life and joy serene
In streams that decorate each verdant scene;
Whilst, as the Arabian rules the fiery steed,
Directs, impels, or curbs his ready speed,
So Wisdom governs with all-powerful hand
That flow of life which decorates the land;
Guides ev'ry stream, leads forth each little rill,
Pours plenty o'er them that each urn may fill;
Or if replete restrains th' impetuous flow,
That each may join the weal of all below.

VIII.

In distant climates where wild regions spread,
That ne'er have known the human foot-step's tread,
If such there be and yet endu'd with grace
To bless the wand'rer of the human race,
Where Spring in all her native beauty reigns,
And showers unask'd her treasures o'er the plains,
'Tis *not a waste, nor are their beauties lost,*
Perchance are saved till from some distant coast

Advent'rous man, the wand'rer of the world,
With banners streaming, to the winds unfurled,
Shall claim their beauties and reduce the soil,
The passive subject of his weary toil.
Meantime the tale our fields have taught will show
By inf'rence just from what we see and know,
Save Alpine heights that wear perpetual snow,
No spot lies vacant in this earth below;
But there where Nature rich in native charms,
Clothes all the wild and all the scen'ry warms,
Beings innum'rous, and of many a kind,
In freedom sport, and cheer in plenty find.
The Lion, Leopard, Wolf, and shaggy Bear
Are fitly plac'd the wilderness to share;
But all unfit to rove the peaceful field,
Where rustic labours rural plenty yield;
The temporary tenants of the wild
That yield the rule at length to reason's child.
There too, those pigmy tribes innum'rous stray,
That need not flee when man shall bear the sway.
As pride and fancy, fashion, all combine
To bid the dear-bought toy more brightly shine

As Turkish Prince when far from home away
Shines in his gold and purply silk array;
As e'en the di'mond borrows half its glow
Because 'tis rare and is of costly show;
So too the flow'r that drinks the torrid beams
And in the Wild with splendid beauty teams,
Transported thence,—the nurseling of the West,
Rare and a stranger shall be doubly blest:
Whilst in its native soil, like our own flowers,
It entertains amid its silvan bowers
The countless myriads of the Insect-breed,
Whose sportive troops upon its foliage feed:
Meantime, like trains that round the courtier swell,
Or youthful Beaux around the beauteous Belle;
Or pilgrims flocking to some dome divine,
The Paynim Mecca or Loretto's shrine,
Around its flower innum'rous vot'ries fly
Allur'd from distance through the pathless sky;
The gorgeous Moths and wild Bees of the East
That from its chrystal fountain flutt'ring feast.
As ether wide, diffusive, mantling spreads,
Pervades each form, o'er all its vigour sheds;

And as the Sun's bright bounty-beaming ray
That paints, illumines, vivifies the day,
Their greater fountain from his hallow'd throne,
Whence from all time, all light has ever shone,
With power divine extends from pole to pole,
And through Creation spreads the living soul;
That Power august and dread whose living breath
Gives life to atoms from the vale of death,
That rules supreme o'er all the realms of space,
Regards the Lily and the Insect Race.
From Him in streams of bliss life's current flows
And vary'd joy in endless form bestows,
Where Silence holds o'er wilds perpetual reign
Who fills the city and the rural plain.[†]

[†] Mr. Dryden in his translation of Virgil has mistaken the word Curculio, viz.

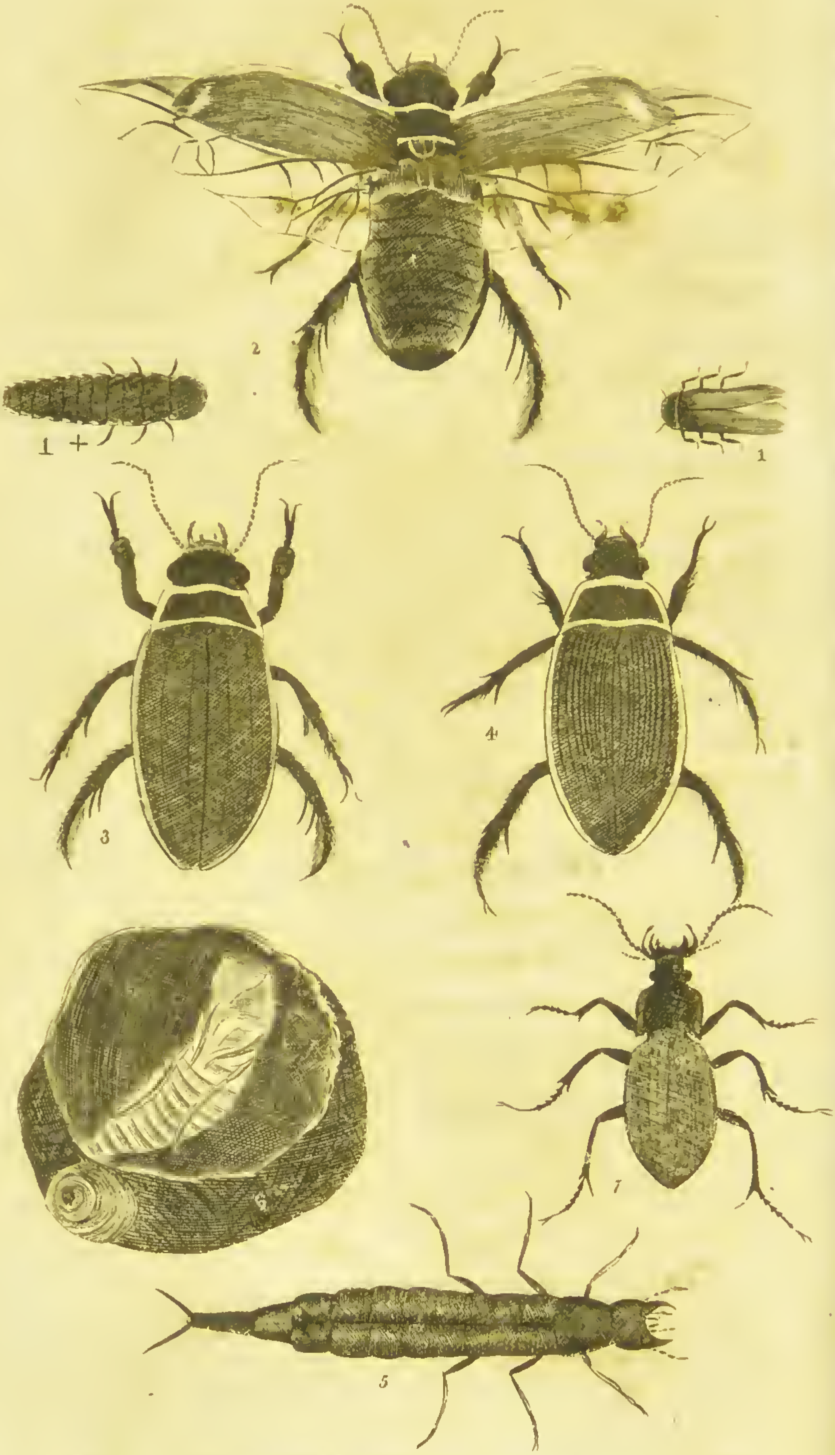
———————— populatque ingentem farris acervum
Curculio,

Virg. Georg. 1. c. 186.

the word Curculio he has rendered *Weasel* instead of *Weevil.*

Dryden, *line* 272.

Plate



[illegible] Cº Bristol

LAMPYRIS NOCTILUCA. The Glow-Worm.

Ess. Gen. Ch. Head concealed under the thorax: *Thorax* terminating the upper surface; thin, the anterior edge rounded or forming the segment of a circle: *Abdomen* in soft folds. *Female* without wings.

Specific Character. Oblong, fuscous; thorax above cenereous: Male winged: Female apterous; the body brown of eleven folds; two of the segments of the abdomen luminous.

Habitat and Economy. The larvæ of this genus resemble the female. They appear to live upon grass; but it is said they also eat snails. The last named circumstance is so extraordinary that it is worthy of further enquiry.

LAMPYRIS noctiluca.

"Urit me Glyceræ nitor
Splendentis Pario marmore purius:"
Hor. Lib. 1. Car. xix.

The brightness of Glycera burns,—and shines
Purer than marble from the Parian mines.

1.

A little worm whose lover flies
At twilight through the air,
Diplays a light from where she lies
To guide the wanderer there.

2.

When darkness veils the summer night,
And spreads her gloom around,
Her little light, will cheer the sight
And glimmer from the ground.

3.

And safely through nocturnal shade
Her lover's path 'twill lead,
And in his little breast pervade,
And hasten on his speed.

4.

So cheerly may your brighter ray
Ye Ladies lead our will,
Around us play where'er we stray
And be our safety still.

5.

For surely Nature kindly meant
In giving us this fly
That unto you the Phosphor lent
The moral should apply.

6.

But mostly ere experience gives
Her torch to light the way,
Whilst ev'ry youthful passion lives
So apt to lead astray ;

7.

'Tis then when all your pow'r reigns
  Supremely o'er the soul,
No other power so well restrains,
  So sweetly can control.

8.

As Cynthia sheds her radiance mild,
  As gems in darkness shine,
So shine ye o'er the heart so wild,
  Soft, lovely, and benign.

9.

Oh! then should darkness veil the sight,
  Should meteors lead aside,
'Tis then your light shall cheer the night,
  And sweetly be the guide.

10.

Whether for me its radiant beam
  Shall e'er be taught to shine,
Full well do I its pow'r esteem,
  And deem it all divine.

11.

Then may it e'er be train'd to glow
  With Virtue's hallow'd fire,
So where it shines it shall bestow
  Each chaste and pure desire.

12.
And may it o'er the paths of life,
So oft with clouds o'erspread,
With darkly lurking dangers rife
Where'er we chance to tread,

13.
Diffuse in sweetly social joy,
In grace, in love, in truth,
And lead the man as erst the boy
Or love-imploring youth.

14.
So be ye e'er the light, the guide
To cheer and aid our will;
In vestal robes or matron pride
Our Polar Star be still.

CARABUS.

Ess. Gen. Ch. *Antennæ* filiform: *Palpi* 6: *Jaws* with never more than two distinct teeth; and in most instances short, incurved, and without apparent teeth:—*Feet* formed for running; the femora of the hinder ones have an appendage at the base.

Habitat and Economy.—There are probably about 150 British species of this Tribe or Genus, (my cabinet contains about 130.) They are insectivorous and voracious. Many of them come abroad in the day time and glitter in the pathway or stray over the leaves and blossoms of plants. Several species however prefer the evening for their predatory excursions; and Carabus cephalotes and a few others never appear at any other time, but remain always during the day in their concealments. Carabus crepitans, a small dark blue species with a red thorax, has long been famous for its supposed power of discharging a powder accompanied with a noise, when likely to be attacked by a larger species of this genus. This is a very amusing tale, and I should be glad if it were in my power to attest as a witness its veracity, but notwithstanding it is avouched by almost every writer upon the subject, as I have had sufficient opportunity in the spring of many succeeding years of repeatedly examining the species, and have never been able to witness the effect, I am under the necessity of doubting its correctness. The larvæ are but little known; some inhabit decay'd wood and others live under ground, &c.

CARABUS.

"Thou mak'st all Nature beauty to his eye,
Or music to his ear;"——

Pleasures of Imagination, *B*. 3. 492.

"How bright the little insects blaze
Where willows shade the way,
As proud as if their painted rays,
Could emulate the day."

CUNNINGHAM.

1.

A Tribe dispers'd o'er ev'ry glen,
Through ev'ry deep entangling grove,
On the broad heath, and in the fen,
In search of prey perpetual rove.

2.

The CARABI in Science nam'd
A splendid, but rapacious race,

And like the Bedouin Arabs fam'd
For moving oft from place to place.

3.

Full often too in Hordes they're found
In social though predat'ry bands,
Conceal'd by stones upon the ground,
Then spreading o'er the neighb'ring lands.

4.

In them full many a colour shines
Of brightest hue and purest ray,
Such as from earth's deep min'ral mines
The toiling pow'rs of art display.

5.

Copper, and brass, and burnish'd gold, †
And ev'ry varying gloss of green,
Whilst on the shields that wings infold
Drops, bands, and crosses bright are seen. ‡

6.

And many an humbler colour glows,
Simple and plain, with all the art
The beauty, Nature's hand bestows,
That she,—she only can impart.

† Carabus cupreus—æneus, Monilis, Hortensis—Arvensis, biguttatus, Inquisitor, Sycophanta, &c.

‡ Car. bipustulatus, Crux major, Crux minor, quadriguttatum, meridianum, subglobosum, &c.

7.

Nor yet to beauteous hue confin'd,
Rais'd points and lines with graceful taste;[†]
And by no common skill design'd,
Like rich embroidery are trac'd.

8.

Ah! wherefore all this brilliant show,
They, heedless of their richest dress,
See not its grace, nor feel its glow,
But ever onwards blindly press.

9.

Wherefore, but that the source of love,
The source of life, the source of joy,
The Sire of all, that reigns above,
Would ev'ry sweet delight employ:

10.

The garniture that decks the meads,
Th' effulgent rays of morning light
That break forth as Aurora leads
The day-star on in radiance bright:

11.

The lucid ether of the sky,
The melody that rings the grove,

[†] Car. catenulatus, granulatus, Hortensis, Monilis, Inquisitor, &c.

He gives to charm the ear, the eye,
To lead to gratitude and love:
12.
And these, like little brilliants play
O'er nature's vary'd robe of green,
And add fresh beauties to the day,
New charms and lustre to the scene.
13.
Nor only so,—their charms so spread
Allure th' ingenuous thought of youth,
By admiration sweetly led,
To search their secret store of truth.
14.
Does he not wish their ways to learn,
The part assign'd to them to trace,
The scope of Nature to discern
Beyond the beauties of her face?
15.
Ah! surely so it was design'd,
Nor does their beauty shine in vain,
It thrills upon the springs of mind,
And rapture spreads through ev'ry vein;
16.
And as it spreads, the thirst he feels
Still deeper of the fount to taste,

Till at that fane the vot'ry kneels
  Whose altar spreads o'er field and waste.[†]

17.

Go then to Science, she shall lead
  Thy steps to many a source of bliss,
That Nature gives the flow'ry mead
  In Tribes that glow as bright as this.

18.

Yes, she shall lead to Nature's store,
  And teach thee all her truth to know,
And she shall arm thee to explore
  The ways of all the Tribes below.

[†] The reader must not suppose by this term any real waste to be implied, it is merely a term signifying uncultivated ground, and in its most extended signification means ground lost to man but useful in the system of nature. See the Curculio.

DYTISCUS. The Water-Beetle.

Ess. Gen. Ch. *Antennæ* setaceous. The *hinder Feet* ciliated, and formed for swimming. *Under part* of the *Thorax* ending in a spine: *Sternum* bifid, and generally produced into a bifid spinous termination.

Habitat and Economy. The Dytisci in both the larva and imago live in ponds or brooks. The larva is long, somewhat cylindrical but flattened, with a bifid or trifid tail; the feet, at least the hinder ones, are slightly ciliated; it is armed with strong sharp jaws; and, as is also the imago, is exceedingly voracious. They live upon small insects. Mr. Marsham has described 49 species, my cabinet contains about 50 or 51; and, probably as many of my own species are not those described by Mr. Marsham, the whole number may be from 65 to 70 species indiginous to Great Britain.

DYTISCUS.

"Verecunda debet esse translatio; ut deducta esse in alienum locum non irruisse, atque ut voluntario non vi venisse videatur."

Cicero de Oratore.

"The affectation and parade of ornament detract as much from an author as they do from a man. Figures and metaphors therefore, should on no occasion be stuck on too profusely; and never should be such as refuse to accord with the train of our sentiments."

Dr. Hugh Blair, *v* 1. *p* 318.

1.

The tinsel glare of glitt'ring pride,
The tricksy of the brain
Full often turns the head aside,
And makes it truth disdain.

2.

The Fop and Belle have both their boast
In lace or figure slim,
'Tis who can shine and dazzle most,—
A Dandy spruce and prim.

3.

So too, Apollo's son's have tried
To glitter in the dress
That tropes and figures have supplied
To clothe their nakedness.

4.

The fervid feelings of the heart,
Where beams of genius play,
In native glow would ne'er impart
Their tricksy glitt'ring ray.

5.

Nor do they seek the food of mind,
That Wisdom can supply,
But float mere bubbles to the wind,
That shine and cheat the eye.

6.

And yet an emptier pride is found
Within that critic's breast,
Who only praises lofty sound
In gaudy figures drest.

7.

Oppress'd and musing thus I stray'd
Where browzing cattle feed,
Whilst day still linger'd in the shade
That eve throws o'er the mead.

8.

When, lo! athwart the careless way
My wand'ring steps had found
A lazy pond before me lay
With tufts of hawthorn bound,

9.

And as I ey'd its surface o'er
An insect rose to view,
And settling on the sloping shore
Disclos'd its russet hue.

10.

No radiant blue, no sparkling gold
Adorn'd its humble vest,
Yet, were its simple story told
You'd say ' 'tis greatly blest.'

11.

Yes, save among that lowly train,
The little Insect-kind,
Thy search would ever be in vain
Such vary'd pow'r to find.

12,

Like birds it cuts the liquid air,
Like fish it parts the wave,
And on the land can travel far,
And in it form her grave:

13.

No, not the gloomy grave of death,
But that where insects lie,
Whilst waiting for the refluent breath
That shall new life supply.

14.

Does not this fly Apollo say
Of your's—and gifts from you,
Within its little tale display
An emblem just and true?

15.

Its simple form, so humbly clad
Combine such gifts and pow'r
As beast, or bird, or fish ne'er had,
Howe'er their pride may tow'r.

16.

Oh! so it is within thy sphere
And those indeed are blest
Who, whilst their tones can charm the ear,
And lull the soul to rest,

17.

Though simply clad, by Wisdom's aid
Such various power display
As show, with thee, the blue-ey'd maid †
Still leads them on their way.

---

† Minerva.
"The blue-ey'd Pallas, his celestial friend."
Pope's Iliad, *B* 2. 342.

FINIS.

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ERRATA.

Preface, page viii. the last line for *enegy* read *energy.*
page xiv. in the last line but one the word *Faune* is spelt with a *w* instead of a *u*, and *Latreille* is spelt *ielle* instead of *eille.*
page xv. the word *Faune* is spelt in the same manner.
page xxi. line 15 for *io* read *to.*
Page 8, line 6, for *belong* read *belonging.*
Page 25 Note, for *Entymologists* read *Entomologists.*
31, line 2, for *others* read *other.*
43, line 18, for *coriaceous* read *crustaceous.*
95, line 7, in the word *Bos-trichus* omit the hyphen.
121, Note, line 2, for *inqulsitor* read *inquisitor.*
147, verse 16, line 4, for *victim* read *victor.*
150, Instead of a , at the word *June* put a .
167, line 2, for *Sartorium* read *Sarrotrium.*
in the word *muticum* the *m* is placed wrong.
line 18, for *Sartorium* read *Sarrotrium.*
168, for *Sartorium* read *Sarrotrium.*
180, in the quotation from the Faune Parisienne, for *reduit* read *reduit*
195, line 13, for *Vispa* read *Vespa.*